

# THE **MAC**azine

Vol. 2 No. 12

The Macintosh™ Magazine for the Rest of Us

\$2.75/Canada \$3.75

## Inside: Best of '85

- Productivity Tools
- Power Communications
- Dream Office
- Tops in Entertainment





# Presenting the end of drafting as we know it: MacDraft™ from idd

**N**ow anyone can generate professional quality drawings quickly and easily with MacDraft from idd. Its ease of use will attract the most casual user, yet its sophistication will impress the professional as well.

This extraordinary Macintosh™ software lets you create scaled drawings so accurate, they can be used for construction or manufacturing applications. MacDraft

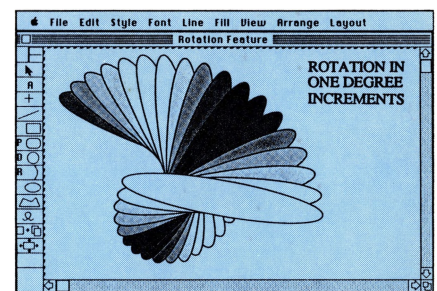
helps turn your concepts into reality, with more flexibility and accuracy than pencil and eraser.

**M**acDraft offers a full complement of commonly used scales. Each has its own grid network. You create a library of frequently used shapes in any scale, copy and paste those shapes from one scale to another. Sizes will automatically be adjusted to the new scale. Work in decimals, fractions or metrics. Line lengths and angles are displayed to scale throughout the drawing process. This saves the task of computing the size of each object.

**W**hen you place a dimension line on your drawing, MacDraft displays the proper size of the object regardless of the scale.

MacDraft lets you zoom in on your drawing and magnify it up to 8x, enabling you to draw in intimate detail. With a resolution of 512 points per inch, you draw

with amazing precision. Zoom out and see as much as 4x4' in a single window. You maintain full drawing capabilities at any view.



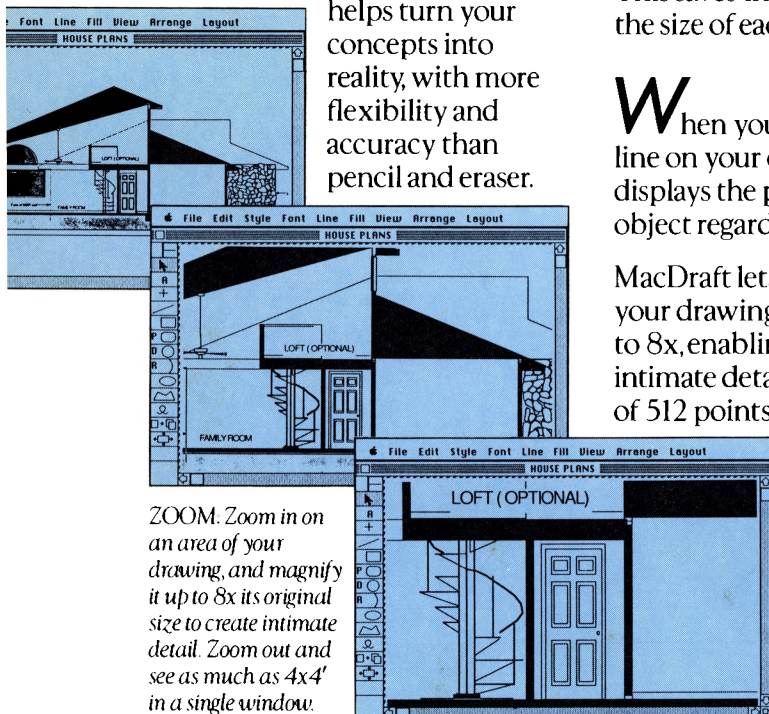
**ROTATE:** Turn objects the way you want them, 1° at a time, through a 360° cycle.

Objects can be rotated singly or in groups, 1° at a time, through a full 360°. This allows you to place objects anywhere on the document with incredible precision.

MacDraft allows you to automatically distribute multiple objects along a line—even if those objects are not the same.

Create rectangles with rounded corners. The corners are in proportion to the rectangle's size to prevent distortion. Dynamically change the radius of these corners to any size, based on scale.

Draw circles in one of two easy ways. To project between two points, choose circle by diameter. To project about a center point, choose circle by radius. Draw arcs in 2 ways: 1—Define the length

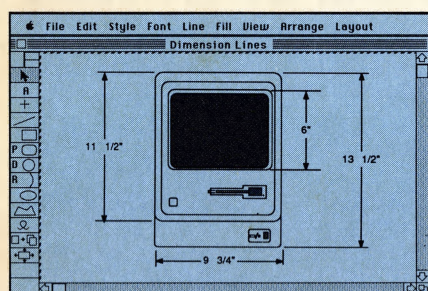


**ZOOM:** Zoom in on an area of your drawing, and magnify it up to 8x its original size to create intimate detail. Zoom out and see as much as 4x4' in a single window.



of the radius and project the arc to the desired angle; 2—Define any three points the arc passes through.

**F**or irregular shapes use MacDraft's polygon and freehand drawing tools, including dynamic editing and automatic closure. MacDraft will smooth your polygon or freehand shape to give you a contoured effect. Add line segments to your polygon or extra points to your freehand shape after each has been created.



**DIMENSION LINES:** MacDraft will display the proper size of the object, regardless of the scale of the drawing.

The continuous drawing mode allows you to maintain the flow of drawing. If you draw beyond the current viewing window, MacDraft will automatically scroll in that direction.

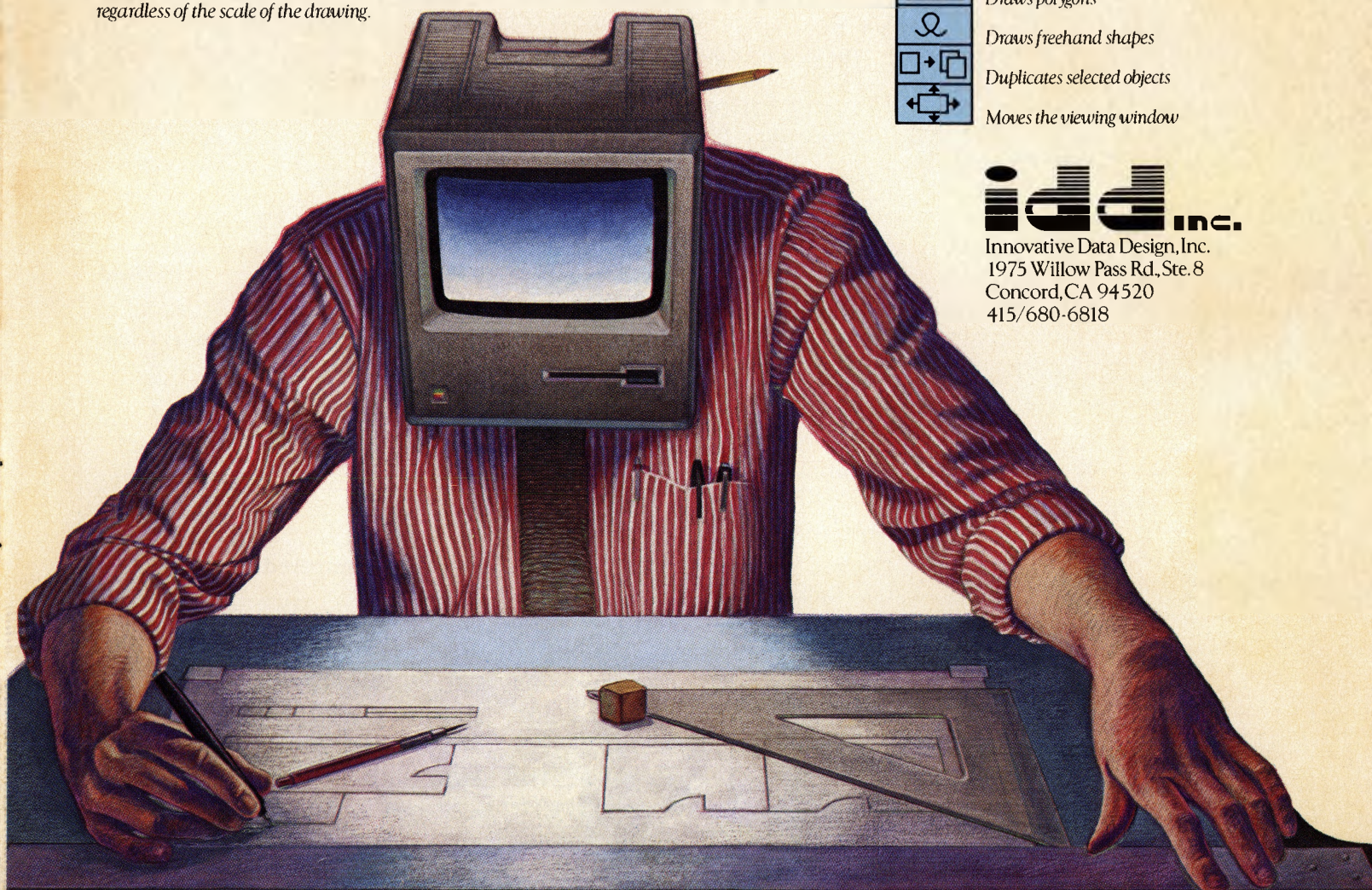
**M**acDraft offers 9 different line styles including thick, thin and even --- dashed. Sophisticated text-editing lets you type letters, numbers and punctuation. These can be displayed in a variety of types and sizes.

MacDraft conforms to the Macintosh™ concept of copy and paste, allowing you to paste in objects from other applications such as MacPaint™ and MacDraw™.

Incredibly, MacDraft is only \$239. A good old-fashioned value that just may convince you to put away your drafting pencil. Forever!

	Fill pattern and line style indicators.
	Pointer selects, edits, moves objects
	Text editing and insertion mode
	Draws horizontal or vertical lines
	Draws diagonal lines
	Draws square-cornered rectangles
	Draws rounded-corner rectangles w/proportional or constant radii
	Draws circles by diameter or radius
	Draws arcs by radius or 3 points
	Draws ovals
	Draws polygons
	Draws freehand shapes
	Duplicates selected objects
	Moves the viewing window

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 415/680-6818







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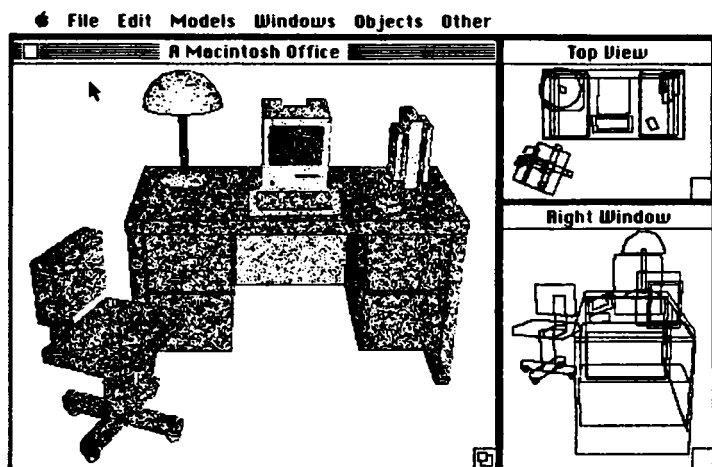
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The cover was designed by Joyce Kleene of Strawberry Software, Inc. using ColorMate and the NEC CP2 color printer.



# Now Mac Models the Real World...



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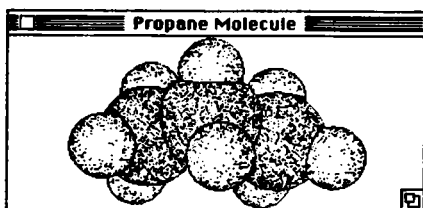
## Mac Model™

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Mac Model is for anyone who draws three-dimensional objects for work or fun. If you're a student, teacher, interior designer, mechanical engineer, architect, or artist (or if you just like to tinker) Mac Model can help you:

- *Build models* of anything from molecules to skyscrapers. Mac Model supports *constructive solid geometry*: start with basic objects like spheres, cylinders, and boxes, then combine them by union, intersection, and subtraction to form any object you wish. It's easier to use and more capable than 3-D systems based on points and lines.
- *View your models* from as many vantage points as you wish, in wide-angle or telephoto perspective. With *automatic shading*, produce realistic drawings easily. With the *sketch* display, see the effects of a change quickly or even "walk through" a model in real-time.
- *Print views* on the ImageWriter™ or LaserWriter™. Reduce a view to fit it into a report or expand it to wall-size.
- *Calculate or change physical properties* of objects, including their size, weight, center of gravity, density, volume, and reflectance.



Mac Model is available now for the 128K and 512K Macintosh™ and is compatible with Switcher. (We recommend the 512K machine for models with complex objects or many views.)

In early 1986 Mac Model will be available as a subroutine library that you can use with your own programs; contact Synoptics for details.

## synoptics

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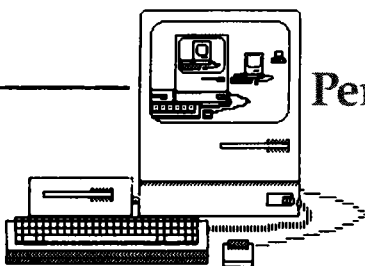
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## Perspective



### **... The best laid plans of mice and men ...**

I wish that I could honestly say that the reason that the results of The MACazine's First Annual Critics And Reader's Choice Awards Poll are not included in this, our thirteenth, issue is that "technical problems beyond our control" prevented their inclusion . . . alas, it wouldn't be quite correct.

The truth is that **HUMAN ERROR** is responsible . . . a **PUBLISHER'S ERROR** to be more precise, and even more regrettable . . . from the standpoint of the Publisher.

The truth is . . . ("This is awful! Why can't we just blame it on the printer? Or the U.S. Mail? The staff?") . . . O.K. . . .

The truth is that to err is human . . . a fact which we've proven (on occasion) beyond the point of dispute. It just happens that this time the "err" was mine. No matter . . .

I took credit for the idea. I took credit for the design of the ballot card. I took credit for selecting and setting up the database manager to be used in tabulating the results. I took both the responsibility and the credit, in my zeal, for the entire tabulation. And I take credit for completing it, re-formatting, manipulating and analyzing the data. I guess I also need to take credit ("Aaarrggghhhh!") for being on the phone while "playing with the numbers" and, inadvertently (but with stunning finality), destroying the entire datafile at a single (it must have been more) click of the mouse! The value of a computer is limited more often than not by the attention or inattention of the operator . . . as our circulation director says, "John, don't these computers just save us a ton of work!"

Well, that's the truth . . . and now I take the responsibility and will take the credit for doing it all over again for the next issue . . . my apologies . . . it is a most interesting survey.

**Merry Christmas . . . and a Happy New Year . . . anyway!**

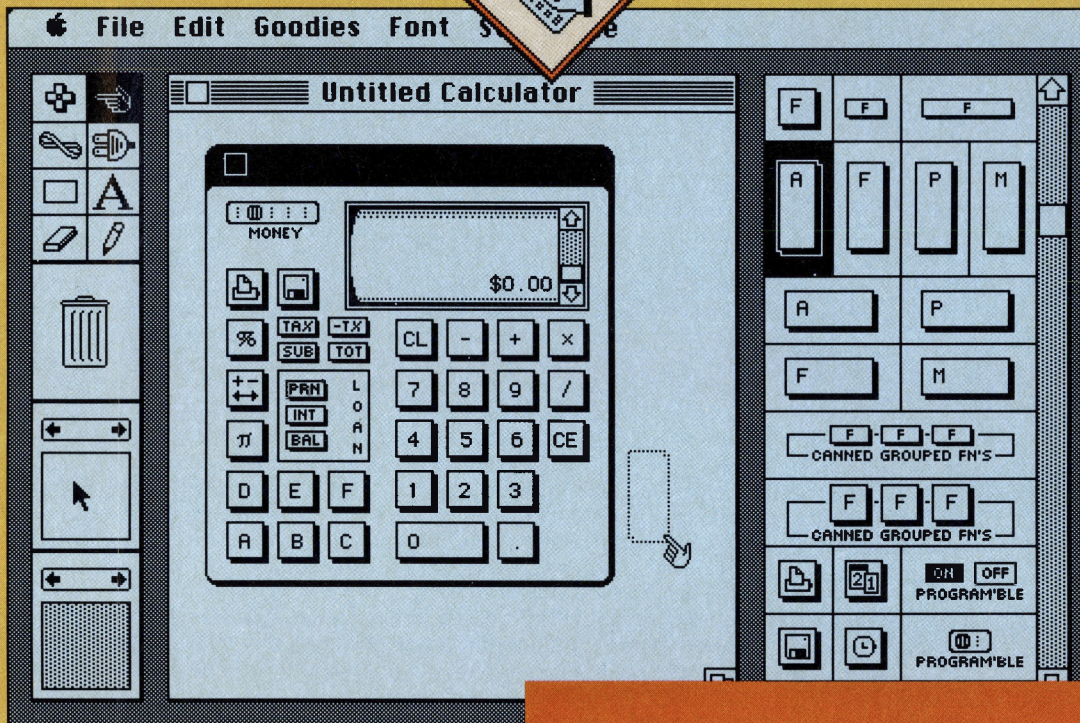
*John D. Buquoi*





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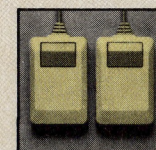
**No programming required.** Just drag predefined parts onto a calculator case, and select the functions! Need more room? No problem—just stretch the calculator case to any size you want. Test your new calculators while still under construction. Or alter them later after hours of installed use.

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Customize your calculator's case using *MacPaint*™ style tools for drawing, painting, erasing, fatbitting, filling, stretching, and typing text. You can even design your own custom cursor to use with your calculator. Calculators may be saved as workfiles (allowing future changes), *Font/Desktop Accessory Mover* files, or as self-installing calculator files. Several sample calculators are included.

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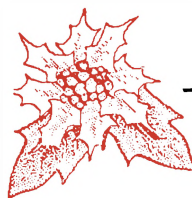
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## Editorial



Welcome to the first anniversary issue of The MACazine! Many of you have asked how we came to be located in East Texas and how did a Berkeleyn like me end up in Athens. Here's the story about the Rest of Us.

Formerly a computerphobe, John D. Buquoi, our publisher, saw the Macintosh for what it was—the computer for which he had waited 20 years. He became a Mac enthusiast and began exchanging hints and tips with fellow Mac users in a newsletter. Enthusiastic readers begged for more information, so in November 1984, John decided to fill the gap left by *St. Mac* when it folded. Former *St. Mac* readers who became charter subscribers to The MACazine will recall that John offered you four free issues in addition to your first year's subscription.

After publishing six issues with Sarah Howard as Circulation Director and righthand assistant, John asked Ann Parris and Chuck Abrams to be our ad sales representatives. They, along with Steve Branda, our East Coast representative, make it possible for your subscription rates to be the lowest of any Macintosh magazine. Joe Cox came on as our Business Manager and Tracy Burk joined as Subscription Coordinator. Sarah and Joe used to work with John and Tracy came from the Athens Daily Review. Many of our callers ask who the lady with the lovely Texas accent is—she's Gail Lambert, our Bookkeeper, a native East Texan with a computer background.

After a thirteen year career at the University of California, I too was seduced by the Macintosh. In May this year, John imported me from California to develop the editorial and design format for your favorite magazine. Since then, Sharon Green, who was Art Director for an advertising firm, has joined The MACazine as Art and Production Director. Mary Germany, formerly with the Athens Daily Review, has joined our staff to coordinate the Professional Services Directory, which is designed to inform you about value-added resellers and consultants.

We enjoy responding to your requests for "less jive" and "more meat" by giving you a magazine packed with book and product reviews, how-to stories and hands-on experiences. We are the only Macintosh magazine with a one-month lead time, a monthly X/Lisa column, a music column, a book review column, The Active Window, Dialog Box, MACademia, Gaming on the Mac and M.U.G. Shots. Our writers and artists are Macintosh users who live in different parts of the country and abroad. They use their Macs, Lisas and XLs at work and at home, and they want to continue sharing their information and news with you.

We at The MACazine are people just like you, enthusiastic Macintosh users who want to share and network. Communication is what makes the world go round, and it is fun to know that we are part of that circle.

December is a month for celebration and gift giving. We celebrate by taking a look at some of the favorite products of the year. In appreciation of your support and loyalty, your active interest and suggestions, your willingness to help your fellow readers, and your enthusiasm in growing wit us, we added eight pages to this issue.

- The Dream Macintosh Office—Michael Holloway, Steve Schwartz, Steve Bennett, Mark Veljkov and our staff have merged your wish lists with theirs.
- Business Products of the Year—Hartley and Patricia Lesser, veteran computer writers, give their opinion on 1985 products worth looking at.
- Communications Packages—Ebbe Ebbesen and George Ryan distill the confusing array of information about telecommunication programs so you can choose wisely.
- The Best Entertainment for 1985—Arnie Katz describes the ten best entertainment packages originally written for the Macintosh, plus the ten best entertainment packages translated to the Mac.
- More on Databases—Chris Cardiff talks about high end database management systems.
- Educational Software—Jürgen Weber writes about the educational aspects of playing Entrepreneur, a game to develop your business decision-making skills.
- Management—John Venable and Hartley Lesser look at two project mangement programs, Micro Planner and MacProject.

In addition, we brief you on other products worth checking out:

- The ergonomic MacTilt
- Manager, an electronic filing system
- VCS, a device which frees your hands from the mouse
- Grid Wars, a new entertainment package

And we include some stocking stuffers for last-minute Mac shoppers.

So stay tuned, same time, same channel, and be with us to celebrate the New Year, and our second year of serving you! Till then, we at The MACazine thank you and wish you a joyous holiday!



# For all of you who thought Dennis Brothers was crazy to give away MacTEP, here's MicroPhone.™ The one he's selling.

When the Macintosh first came out, the most powerful personal computer ever built didn't have the brains to make a phone call.

So Dennis Brothers tore down his Mac, figured out how it worked, and wrote Mac's first communications program, MacTEP.

Which he proceeded to give away.

MacTEP was a classic. The first standard in Mac communications.

Now he's created the second: MicroPhone. A program that goes far beyond any communications software currently offered for any computer.

MicroPhone is so sophisticated, it cuts through the worst tangles you encounter when you go on-line. A delight to the experienced. And a saviour for the novice.

## Run on automatic.

When you open MicroPhone to the desktop you'll find a comprehensive collection of icons pre-programmed to access all major information services: CompuServe®, Dow Jones News/Retrieval®, The Source<sup>SM</sup>, Delphi,<sup>TM</sup> the works.

A few clicks and you're in. With automatic log-in and sign-on.

But that's just the beginning of its ability to automate the whole telecommunications process. For MicroPhone features the most powerful, yet simplest to set up macros ever seen on a program.

## Write your own script.

Dennis gives you two ways to create these macros. The first is to set MicroPhone in the Watch Me,<sup>TM</sup> the recording mode.

The program looks over your shoulder as you conduct a communications session following your keyboard and menu commands.

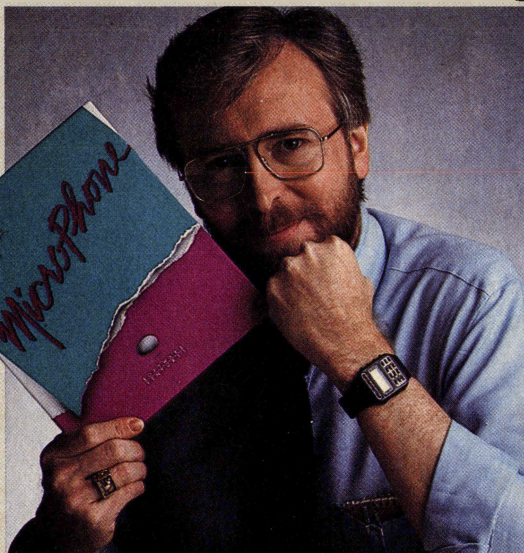
MicroPhone can remember not only an uninterrupted string of keyboard commands, but also wait-for-prompt conditions. In fact, virtually any series, no matter how long or complex.

The entire sequence is saved. To be invoked at any time with a single key command.

The second way to generate macros is through MicroPhone's unique "Script" window. Open it and you'll discover an extensive set of functions which can be called up and linked with a series

### Let's get technical box.

*Runs in terminal emulation mode at speeds up to 57.6K Baud. Emulates DEC<sup>TM</sup> VT52,<sup>TM</sup> VT100<sup>TM</sup> and TTY type terminals. Supports TEXT (ASCII) and XMODEM (Christensen) protocols, send and receive. Supports MacBinary. Runs on 128K and 512K Macintosh. LaserWriter compatible. Includes Switcher for use with other Macintosh programs. Compatible with Hayes, Apple and other leading modems. Built-in full text editor licensed from Dreams of the Phoenix Inc. Documentation by Neil Shapiro.*



of mouse clicks. The resulting macro is extremely powerful. The method is Mac-simple.

Using Watch Me or the Script window, or a combination of both, you can automate log-ons, file transfers and unattended operations. And navigate back into the farthest reaches of any database with a single stroke.

## Make files fly.

Sending and receiving files is faster and easier with MicroPhone, too. Using XMODEM protocols and MacBinary, MicroPhone transmits or receives anything you can create on a Macintosh. Including MacPaint documents, text, spreadsheets, charts, database tables, or programs.

MicroPhone allows you to scroll back and forth at high speed to review your session. Then you can select any portion of your session, print it, save it to a file, or copy it to the Clipboard for use by other Macintosh programs.

MicroPhone also features an editor desk accessory for composing text in mid-session using familiar Macintosh editing techniques.

But enough talk. See for yourself what Dennis Brothers has done now to advance the cause of telecommunications. Just take any major credit card in hand and call us toll free to place your order.

Dennis isn't giving it away this time. But at \$74.95, almost.



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In USA and Canada add US \$5.00 for postage and handling per product ordered. All other countries add US \$10.00. In California add 6% (\$4.50) sales tax. ALL FOREIGN ORDERS: please make payment by bank draft, payable in US dollars, drawn on a US bank. No C.O.D. or Purchase Orders. If you are not 100% happy, return MicroPhone within 30 days for a full refund.

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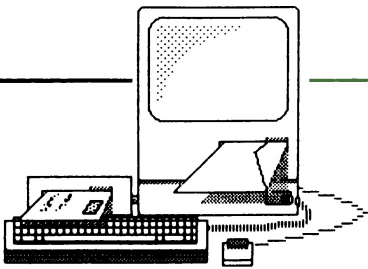
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## Mail



### Product Promotion

I was pleased to see the short letter by David Betz in Mac Mail since I have long admired the way he has been developing xLisp. It is available as public domain software to anyone on CompuServe. Documentation on xLisp as well as other related Lisp programs is also available. This openness encourages widespread experience and development in Lisp. I wish more people in commerce and industry had this policy of non-concealment. It would encourage more rapid maturation in software development. I can't begin to say how refreshing I find Betz' attitude towards the xLisp effort.

In the world of software commerce and copyright law, there is a great deal of emphasis placed on combating pirating, so much so that some companies seem more interested in this effort than in the quality and content of their product.

From the consumer viewpoint, there are hazards involved in buying software based upon information found in the manufacturer's brochures and advertising—or in software critiques and reviews. Yet, few retail outlets can afford to keep demo packages available on even the most popular software. The problem is even worse for small stores which lie outside of large urban centers and where the need for examination copies is greater . . .

I have learned from bitter experience with MusicWorks that one should try software carefully before buying it. Its advertising claimed that the program would print professional scores. In truth, the program prints out an unreadable score—a mess which could have been designed only by someone who is ignorant of conventional music notation practices. Hayden will not make improved updates available to registered owners. After a long letter war with Hayden, I gave up. I let my subscription lapse to any magazine which reviews Musicworks favorably. George Litterst is the most informed and objective reviewer of music software, but even he is too nice about MusicWorks.

Software companies and retailers must provide a way to allow potential customers a chance to check out a product before buying it. In-store demos and advertising copy do not always provide adequate information on a product. After buying MusicWorks, I knew I had been had after getting my first printout. The best method for consumers is to foster a let-the-buyer-beware attitude and then borrow illegal

copies for a trial period. If the borrower decides to adopt the program, then he should purchase a legal copy. To avoid getting stung, the wise consumer is forced to resort to illegal means of examining software products.

Kenneth R. Rumery

*(We do not recommend illegal use of any program. Rather, we suggest a creative, cooperative solution such as the one designed by BMUG, the Berkeley Macintosh Users Group. They recently held a Mactoberfest on the Berkeley campus, the purpose of which was to let people test drive various Macintosh products without the usual sales and marketing hype. The Fest was staffed strictly by BMUG members who demonstrated the features, pros and cons of various software applications and hardware peripherals. They gave their own opinion of each product, and talked about drawbacks and bugs as well as all the positive capabilities. BMUG obtained software and news releases from various developers, and Apple Computer Company provided Macintoshes and two representatives to answer hardware questions. BMUG's approach, "tell it like it is from a user's standpoint" was very successful. Most MUGs arrange for demonstrations of products at their meetings. We suggest all readers participate in or start a local user group to share information and help each other. For more information, contact BMUG, 1442A Walnut St., #153, Berkeley, CA 94709.—Ed)*

### Support for Orphan Support

Thank you for the changes in MACazine. I would like to compliment you on the improvements over earlier issues I've read. My particular compliments to the inclusion of Orphan Support by Dave Redhed.

I purchased my Lisa (read Mac XL) just prior to the radical shift in Apple's marketing and appreciate any information about this superb computer that I can find.

Thomas V. Tregenza  
Wheaton, IL

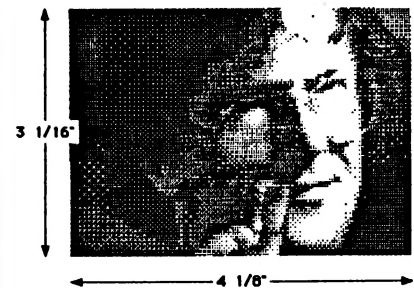
Your articles on the XL are a life saver! Every other magazine has decided to ignore us. XL owners seem to be a dedicated lot and there are enough of us to support your articles. More power you.

Paul Adler  
New York, NY

### Thunderscan Rides Again

As you can see from the enclosed picture I did buy Thunderscan and have been using it for all kinds of digitizing. As soon as I find more time I would like to marry Thunderscan to a plotter because some pictures are rather hard to get through the Imagewriter. By the way, congratulations on your magazine; I have been a subscriber since April and admit to liking MACazine better than any other. The picture below was done with some help from Magic and this letter is being written with help from MacDraft. So many neat little toys and so little time.

Heinz Lackner  
Oakland, CA



### Cooling Solution

My Mac works in a semidusty and hot location. For that reason I was very concerned and looked at quite a number of cooling devices. The best solution I have seen was from a company located in Irvine, CA. A fan pulls the air through a very fine, cleanable filter. An airflow guide, inside the Mac, directs the air to the major heat sources, but keeps the sensitive disk drive(s) out of the direct air flow. I clean my filter with soap and water once a week, but under normal conditions this should only be necessary once or twice a year.

The company will either convert your Mac or send you the modified back portion of a Mac case in an exchange arrangement.

Contact: Custom Computer, P.O. Box 5005, Irvine, CA 92716-5005. Phone: (714) 786-3418.

G. Cornelia  
Los Angeles, CA





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## Copy Frustration

Upset and frustrated today after trying again for four hours to move the calendar desk accessory from the Club Mac membership disk to any of my other disks. Impossible!!! Every time I try to make the move, I get an error (bomb) screen with the ID=4,-1 message.

I saw the letter from David Hoefer of Townshend, VT in the September issue and immediately used my Copy II Mac utility to edit the file type and creator as Hoefer suggested. I was initially puzzled because the extant names were ZSYS (for the Finder Filetype) and MACS (Finder Creator) which are identical to the current name/creator for the notepad file. But I changed them as suggested only to receive the same error message and bomb when I tried again to transfer the Calendar. So I am stumped and at a standstill. Sure could use some help on this!!!

The calendar desk accessory which arrived with the Club Mac disk is an absolutely super tool. At a glance, one can view the entire month and see if any forthcoming dates are highlighted, indicating that there are notes for that date. A click of the mouse brings up a large Notepad. So it sure would be nice to use this option, but I cannot move it to other disks. Any idea why? I am using a 128K Mac, so maybe that's the source of the problem since the calendar DA is over 18K. I do not understand any of this and hope someone in the know will help me out. Real Soon?!

I'd like to see more coverage of technical Macintosh problems and solutions similar to Eric's September column.

Keep up the terrific work; each and every issue is better, bigger, and filled with more useful and timely information. Perhaps you should think of changing the front cover motto to "The Macintosh Magazine for ALL of us."

Jon M. Olson  
Spooner, WI

## The Mac Office

We are attempting to start a Macintosh office with a Fat Mac, second drive and NEC 8810 spinwriter. We opted for the NEC as the quality of the Imagewriter was not up to typewriter standards; 55 characters/second outperformed the Imagewriter in output which is the reason for a Macintosh office.

NEC assured us that their accessory disk could adapt the Imagewriter printer driver. This is a true statement as far as it went, but it does not go far enough. They should have said that all Imagewriters except the Imagewriter 15.

We decided to buy software from the same developer. We chose Microsoft Word, Multiplan and File. We adapted the Word and Multiplan print driver to the NEC with no problem. With File it was impossible. Finally, we awoke to the fact that

File print driver is Imagewriter 15, which is incompatible with the NEC. Microsoft says there is not way to adapt or convert the 15 to the regular size.

Now it appears that because of this incompatibility of programs from the same vendor, we will have to get an Imagewriter as well. We understand that pioneers are bound for a few arrows, but surely this trail has been blazed before by others, but not recorded for the other wagon trains that follow. Some sort of clearinghouse must be set up or the Macintosh Office will be aborted before birth.

Bob Davis  
U.S. Imaging, Inc.  
Carol Stream, IL

## More Hidden Characters

I was glad to see the Cairo Font Table in the September issue. Most of the hidden characters in some standard Mac fonts have been published separately at one time or another, but here is a chart with many of them.

Our Mac was originally purchased for my wife, an archaeologist who uses it for word processing and graphics. But since its arrival, it's been a struggle for her to get near the keyboard, so she's thrilled when your magazine arrives each month—at least she gets to work on the Mac while I'm reading!

Dennis Appleton  
Lynbrook, NY

## "Hidden" Fonts: (Option+Shift on ~ key)

Geneva 9 pt. - ○○○○○○○○○○○○

Geneva 10 pt. - □□□□□□□□□□

Geneva 12 pt. - ✖✖✖✖✖✖✖✖✖✖

Geneva 14 pt. - ════════════════════

Geneva 18 pt. - ○○○○○○○○○○

Geneva 24 pt. - ✖✖✖✖✖✖✖✖ (Outline: ════════════════════)

New York 9 pt. - ♥♥♥♥♥♥♥♥♥♥♥♥

New York 12 pt. - ■■■■■■■■■■■■

New York 14 pt. - ════════════════════

New York 18 pt. - ♥♥♥♥♥♥♥♥ (Outline: ════════════════════)

New York 24 pt. - ■■■■■■■■■■

Monaco 9 pt. - ════════════════════ (Outline: ════════════════════)

Monaco 12 pt. - ■■■■■■■■■■■■

Monaco 18 pt. - ════════════════════ (Outline: ════════════════════)

Venice 14 pt. - ○○○○○○○○○○ (Outline: ○○○○○○○○○○)

London 18 pt. - ✖✖✖✖✖✖✖✖ (Outline: ════════════════════)

Athens 18 pt. - ✖✖✖✖✖✖✖✖

Toronto 12 pt. - ════════════════════ (Outline: ════════════════════)

## New BBS

There's a new 24 hour bulletin board with public domain software. Called RAM BBS and located in Racine, WI, you can reach it by calling 414-632-3983. 300/1200 BAUD, Macintosh based using 5MB Tecmar.

C. Henry  
Racine, WI

## MUG Update

The correct address for Apple JAC (Joint Aid and Comfort) MUG is 2539 Lexington Dr., Jefferson City, MO 65101.

Thomas R. Piper  
Jefferson City, MO

## Yay MACazine

Thus far the reviews and opinions I've heard are unanimous—MACazine is preferred over MacWorld. Congratulations on your first anniversary of having been rejected by Apple Computer to become Certified Developers. No publication can have a growth rate like yours, unless of course they're great.

Daniel E. Powell  
Windsor, CT



## Handicapped R&D

Where are alternative I/O devices for the Handicapped?

Corporations such as IBM, Apple, NEC, AT&T, Compaq, Sperry, Epson, Xerox and others will undoubtedly say they are already doing a lot. Well, if they are where are the fruits of their labor *that the individual can afford*, not the institutions and hospitals but the individual at home that wants to use a personal computer to its max? I don't hear or read of any good new products.

There were more good things done in the early or "hacker" days of computing for the handicapped than are done now, but now it's become a very professional business run by and for businessmen and that's a shame because technology has come so far since then. If products exist, it is time to advertise it; the American public is mature enough now to handle it. By that I mean there may have been a time when the subject of handicapped people was more or less like a minority that most people ignored because they had problems dealing with it.

General attitudes among people may have changed, but not corporate ones, and I don't expect them to.

It seems to me in this IBM market that if another computer maker wanted to distinguish itself from all the rest and get the very best in PR, then it should do something philanthropic (I'll take it any way I can get it!). The public in general has a natural distrust for large corporations, by natural I mean, by example, Pavlov's dog had a natural instinct for knowing when dinner was ready.

I recently have seen a couple of different Dow Corporation commercials on TV about kids just graduating from college and these young people are looking forward to going to work for Dow so they can develop certain products that help people. One example was to help high risk heart patients, I think. The point is I think they're great commercials. The bad news is that Dow doesn't make a personal computer that I know of, so why doesn't some computer corporation take a page out of Dow's book?

There is little available that's practical or affordable, and there is not a strong communications network—it seems only money talks and belief is that there isn't enough money in the market I speak of here. Bull. I think there is a huge market. It's just not as large as "the general public." Imagine the PR that a 1% advertising effort could bring! The good will of the people can go a very long way. Isn't that what advertising is all about? By being "cheap" on handicapped R&D, big companies are really missing the "boat." The boat I speak of is the opportunity to receive priceless public recognition.

I seriously wonder if any corporations are working with different handicapped groups to define their special needs.

Maybe tax incentives should be larger? I don't know. I thought they were large, so why aren't there practical, affordable computers for the handicapped person that spends most of their time at home or has difficulty writing, or the handicapped professional? The MAJOR BREAKTHROUGHS are great, but wasn't personal computing a major breakthrough?? I think it's past time for *everybody* to enjoy and be able to take advantage of personal computers with reasonable effort. God knows most computers are difficult enough to use for the so-called nonhandicapped. Think of those who don't have the use of every limb, or all five senses.

The problem most people have is an unfriendly operating system, and that problem will eventually be cleaned up because nobody likes it and there exists a very lucrative market for friendlier operating systems/environments, but that is a minor problem for a handicapped person compared to the fact that the input devices (keyboard, mice, joystick, etc.) and output devices (monitor, printer, etc.) on every standard personal computer make no allowances for the handicapped person.

Yes, there are a couple small companies that will modify someone else's computer so that it "talks" the text it displays, also a couple that print braille, and these are very worthy and commendable efforts, but usually they range from \$5,000 to \$10,000 and as you can see these examples are fitted to the Blind population. That's only one segment of the picture. I'd like to see products available that do as much for people who are incapable of using a keyboard. The hope I see at the moment for R&D into speech recognition (which still has a long way to go) is the fact that there are a lot of "lazy managers" who don't possess the dexterity to type, or think it's a "secretary's job" and will buy a computer they can dictate to! Fortunately this technology will "SPILL-OVER" to the handicapped user. That's what the handicapped get for the most part, *spill-over technology from Space programs and lazy fat cats!!*

I'd like to see a regular HCES (Handicapped Computer-Electronics Show). But not being in "The Majority" I'm easily laughed at, Ha Ha, big joke huh? I believe we can do more for the Handicapped than any other country in the world, but for everybody's sake we'd better start trying harder!

Have you ever noticed that many of the greatest discoveries and bases for many inventions were discovered by accident while the "discoverer" was looking for something else?

Keeping this in mind, it seems to me that if a corporation would separate a small part (say 10%) of its R&D resources

for handicapped I/O research, then even if they did not come up with what they were looking for, there's still a good chance that they would come up with something, maybe even something immensely original and profitable! Nothing wasted.

This seeming logical to "little old" me, I find myself wondering why it isn't already being done. Maybe this kind of expenditure is hard to explain to banks and other investors, and if your company needs these investors, I guess they can tell you what to do. Pity.

Do these handicaps sound familiar? Short-sighted, self-centered or just too greedy, sometimes all three. All of these are corporate "handicaps" (as well as human) and lead to lousy products with rare exception.

Maybe I'm wrong. I'm sure there are some key executives of computer corporations who go home at night exhausted and tense from a tough day, who put on their slippers, recline in the chair, pet the dog and gratefully accept a drink and a kiss from their wife (or husband as the case may be), then perhaps while viewing the news or some commentary say to their loved one, "Gee, 'hon,' you know I wish I could do something to make this world a better place." Well, if you think it's bull, you can consider yourself scratched off my Christmas list.

Other thoughts invited.



F. Hoban  
Reeders, PA

We welcome reader responses, comments and inquiries. Although we cannot personally answer each letter sent in, we publish those letters which reflect the representative concerns of our readers. We reserve the right to edit any letter that is published.

If you wish to contact our writers directly, here are their addresses:

Technical questions: Dialog Box c/o Russ Schnapp—CompuServe 74736,2125

X/Lisa topics: Dave and Lisa (Orphan Support) c/o The MACazine, P. O. Box 1936, Athens, TX 75751 or CompuServe 70167,613

MUG questions or to share information: Ebbe Ebbesen, 13267 Silver Saddle Ln., Poway, CA 92064; or CompuServe 74176,126

What's Hot and What's Not tips: Charlie Jackson c/o The Active Window at The MACazine; or CompuServe 73026,3325.

Games & Entertainment: Joel Reid c/o The MACazine.

Music & Sound: George Litterst c/o The MACazine

Hardware: Russ Schnapp c/o The MACazine; or CompuServe 74736,2125.

Business Productivity: John Venable c/o The MACazine.

AUC Projects: Mark Veljkov c/o The MACazine.

Books: Cheryl Sandler, c/o The MACazine  
General News: Michael Holloway c/o The MACazine or CompuServe 76324,2255;  
Steven Schwartz c/o The MACazine or CompuServe 75745,1447; William Lathrop c/o The MACazine or CompuServe 76324,3716;  
Stephen Bennett c/o The MACazine.



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# On Line

## A comparison of communications packages for those bitten by the Baud Bug

**T**elecomputing can be both exhilarating and frustrating. The fear of making a total fool of yourself when trying to log on to a local BBS for the first time and the joy of finally downloading that public domain program that you wanted are unmatched in other areas of man-machine interaction. Nonetheless, this is one area that Mac users seem to be exploring with a passion.

To help demystify communications, we describe communications features and a comparison of several major programs. We also report the results of a recent comparison of the ability of modems to resist transmission errors induced by noisy telephone lines. That study was conducted by Ken Petersen of the Portland MUG.

### Features of Communications Software

Communications can be simple or complex depending upon the match between your communication needs and the features that your software and hardware provides. The programs differ largely in the number of features and the ease with which the user can access them. Here are the features that we consider most important.

### AutoDial and ReDial

AutoDial refers to the program's (and modem's) ability to automatically dial a telephone number, with the click of the mouse button or at a specified time. The AutoDial feature is most useful when combined with a directory of easily available phone numbers. With AutoDial the user can select a local bulletin board system (BBS), CompuServe, the home office, a distant friend's Mac, or some business information service by name and the program will automatically dial the phone number. Some programs are even smart enough to ReDial the same number over and over if the line is busy. It is especially useful for users who call BBSs, where the line is busy more often than not.

### Screen Buffers

Most of the time, the amount of information that you will want and need from another computer will be much greater than can fit on the Mac's screen at one time. As new information is sent from the other computer to yours, it pushes old material off of the top of the Mac's screen. Some programs allow you to save that information to a buffer in memory so that you may, at any time during a communication session, scroll back and examine the old information. Because memory is limited, some programs also provide the capability of sending buffered information to your printer or saving it to a disk file—all while still on line (connected) with another computer. In some cases buffering is automatic, in others it is turned on and off via menu selection, and in still others parts of the screen that you have highlighted can be saved to a new file or in some cases appended to the end of and already existing file.

One particularly useful form of screen buffering, available in only a few communications programs, is the ability to cut, copy, and paste information from the screen to the Mac's clipboard. This feature allows you to (1) highlight a section of the information being sent to your Mac and save it to the clipboard; (2) type a message using a word processor such as MacWrite, copy the message to the clipboard, and then send that message from the clipboard to the other machine as if you were typing it at a very fast rate; and (3) move information around in the screen buffer before moving it to the printer or saving to a disk file. This feature is most useful when running the communications program with MacWrite in the Switcher.

### Communication Protocol Settings

All communication between two computers must conform to specified rules—a language or protocol. Machines have different protocols, depending on the software they are running. In order for your Mac to communicate accurately with them, your communication software must be able to both send and receive information according to the rules agreed upon with the other computer. Such things as Baud Rate, Stop Bits, Parity, Number of Data Bits, Linefeeds, and Xon/Xoff Flow Control are examples of these protocols. The software must provide sufficient control over these options to allow your Mac to speak the same language as do other machines.

### Terminal Emulation

Some computers with which you may wish to communicate will go so far as to expect that you are using a particular type of dumb computer (a terminal) to communicate with it. This is particularly true with large mainframe computers whose communications hardware and software was originally designed by computer hackers who believed that only a small handful of hardwired terminals (under their control, of course) would communicate with their machine. If you need to communicate with such machines, your software must have the ability to fool the mainframe into thinking that your Mac is one of these dumb terminals. In particular, because different terminals use different keystrokes to accomplish similar tasks (e.g., backspace, clear screen, move cursor up one line), your Mac must translate your keystrokes into commands that the mainframe will understand and vice versa. This is why all or most of the emulations have names that are the same as various commercially available terminals: ADDS, Beehive, Televideo, IBM 3101, DEC's VT-100 and VT-52, or Textronix 4042 and 4014.

### File Transfer Protocols

Two types of file transfers typically occur between computers. One form is virtually the same as typing a memo to someone. The important information consists of letters and words, i.e., text. Usually, typing errors do not prevent effective communication and therefore one need not be overly concerned about errors.



A second form of computer communication requires that every detail (every binary bit) in the received message be identical to that in the sent message. For example, if you wish to send a program from one Mac to another, one error in transmission could easily prevent the program from running correctly on the receiving machine. To insure that files are transmitted with little or no errors, several different error correcting (binary) transmission protocols are used. Your Mac's communications software must be able to conform to the protocol that is used by the machine with which you want to exchange files. If the other machine only knows how to correct transmission errors via the XMODEM protocol then your software must have the XMODEM transfer capability. Several of the more common error correcting binary file transfer protocols are XMODEM (sometimes called Modem 7), MacBinary (a preferred system for transferring Macintosh files), Kermit, CrossTalk, and Hayes Verification.

Text file transfers can also occur according to different rules. For example, the machine that you are calling may append a linefeed and a carriage return to the end of every line of text that it sends you. This format may cause problems later if you plan to edit the text in MacWrite because the carriage returns will interfere with MacWrite's automatic wordwrap. Alternatively, you may wish to send a text file to another machine but its software may require a delay of three to four seconds after every line that you send in order to process the text. In such cases, your software would have to delay the same length of time before it sends every new line in order to prevent the Mac from getting ahead of the receiving machine. Software packages vary in the extent of control that they give users over the way in which text files are sent and received.

## Graphics

A picture may be worth a thousand words but if you cannot see it, who cares. In pre-Mac days, except for highly dedicated terminals and mainframe computers, all communication was in text form. The Mac has raised the importance of graphics in computer communications and some communication software takes advantage of this fact by allowing two machines to interact in graphics as well as text mode. In graphics mode, both machines might display a MacPaint-like screen on which changes in the display produced by one user are simultaneously shown on both machines. Such a system might be especially useful to a sales manager and a sales person who is a thousand miles away when both are trying to design a chart showing sales growth for a report that is due that afternoon. Other software allows your Mac to emulate a standard graphics terminal, one that might be used in computer aided design or as a programming station connected to a large UNIX system.

## Macros and Command Languages

Much telecomputing involves repetitive activities. For example, the sequence of commands that an investor might perform to call Dow Jones information service, log on to the service, get information about the same three stocks, save that information to disk, and then log off the service will be the same every time the call is made. To automate repetitive tasks many communication programs include macros, a command language, or both. Macros are sets of commands that can be called by single keystrokes or mouse clicks. For example, a local BBS might ask you for your name and address every time you call. To save the time and energy required to type the same thing each time you call the BBS, the communication software can be programmed to type, automatically, your name and address whenever you click a special button.

A more sophisticated method of saving time is provided by command languages. Some command languages allow the user to predefine an entire session with another computer so that everything is accomplished automatically. The communications

software might be programmed to keep dialing a number starting at 3:00AM (when the rates are cheapest) until it gets through, to sign on to the home office computer with your secret password, to ask if you have any mail from the boss and to read the mail into your machine if you do (and maybe save it to disk), to send a message to your secretary, to find and then download to your disk a weekly updated database using XMODEM protocol, to send a weekly report of your activity to the home office machine, and finally to log off the home machine with the proper sequence of commands. Some command languages are better than others because they include command forms that are frequently required for automatic operation. One such command form is the "conditional." Conditionals allow the communications program to branch to different command sequences depending on the content of the information being sent to your Mac. For example, there is no need to attempt to read mail if none exists.

## Timers

Fully automatic interaction with other computer systems often requires that both the time of day, and the length of time that has passed since a predetermined event, be available to the communications program. Not all programs provide both of these capabilities. Some software packages provide on-screen clocks that display the length of a call and some modems provide the same feature in hardware.

## Voice and Data Operation

Several modems provide the user with a phone jack and a telephone line jack. By connecting a regular telephone to the modem it is possible to switch between voice and computer communications, provided the software has the appropriate command. This capability is useful when calling a friend with a Mac by voice to first discuss what it is you want to do in a particular communication session. Programs and modems that do not have this capability require that two separate calls be made—one by you and one by the modem.

## Unattended Operation

The combination of a command language and timers provides one form of unattended operation already mentioned. A second form arises when others may need to call your Mac to leave you a message or to get a file from your machine while you are away. This requires that your modem have an AutoAnswer feature, that your communications software have a Wait for Call feature, and that your software gives the caller sufficient control of your machine to accomplish their communication task. Some of the programs include a mini BBS that allows the caller to leave you a message and download a file from your machine to theirs.

## Mac User Interface

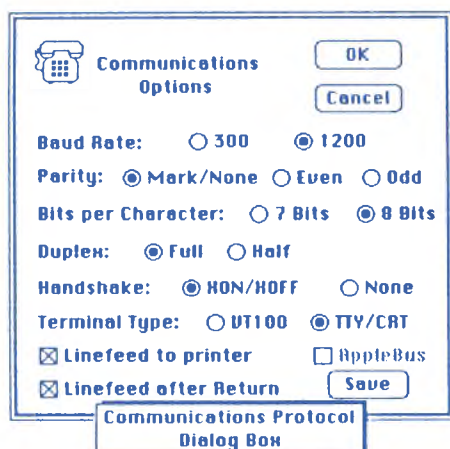
For the novice, one of the most important features of a communications program is its ease of use. In other words, how well does the software utilize the Mac user interface: the mouse, icons, pull down menus, etc.?

## Seven Communications Programs HabaCom

This program is touted as the easiest telecommunications program to use. In one sense the program conforms to the hype. It is easy because it lacks most of the telecomputing features that are essential for effective communication.

On the positive side, besides taking full advantage of the Mac user interface, HabaCom includes AutoDial with a directory of eight phone numbers, and relatively good control of necessary communication protocol settings through the use of dialog boxes (Figure 1). In addition, files can be captured to disk by using the Recording On on menu selection. Recording On either





**Communications Options**

OK Cancel

Baud Rate: ☐ 300 ☒ 1200

Parity: ☒ Mark/None ☐ Even ☐ Odd

Bits per Character: ☐ 7 Bits ☒ 8 Bits

Duplex: ☒ Full ☐ Half

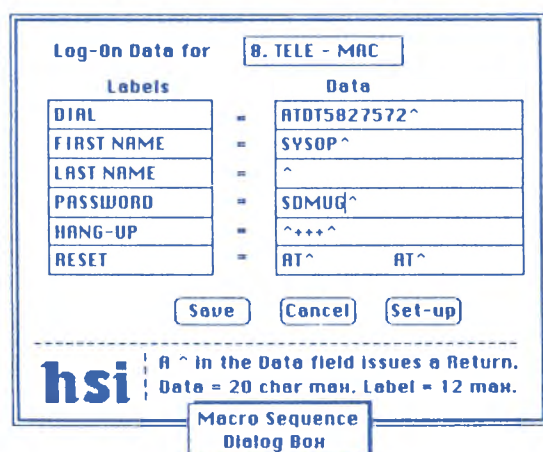
Handshake: ☒ HON/HOFF ☐ None

Terminal Type: ☐ VT100 ☒ TTY/CRT

☒ Linefeed to printer ☐ AppleBus

☒ Linefeed after Return Save

Communications Protocol Dialog Box



Log-On Data for **8. TELE - MAC**

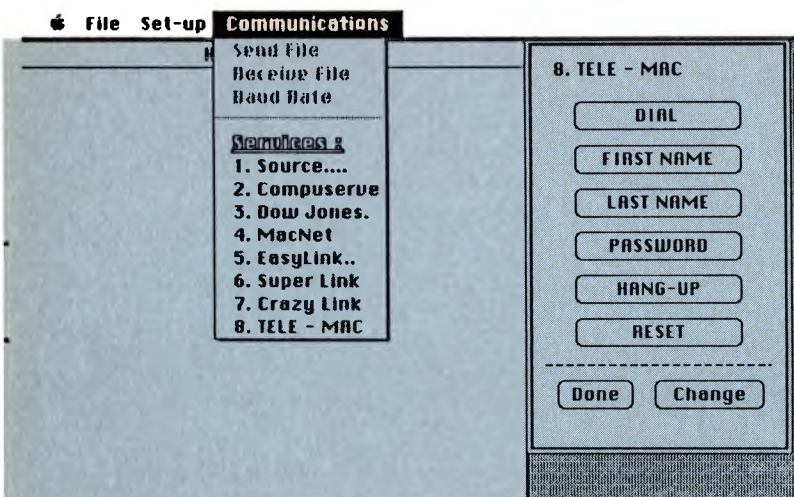
Labels	Data
DIAL	= ATDT5827572^
FIRST NAME	= SYSOP^
LAST NAME	= ^
PASSWORD	= SDMUG^
HANG-UP	= ^+++^
RESET	= AT^ AT^

Save Cancel Set-up

**hsi** A ^ in the Data field issues a Return.  
Data = 20 char max. Label = 12 max.

Macro Sequence Dialog Box

Figure 1 HabaCom's communications protocol and macro sequence dialog boxes.



File Set-up Communications

Send File  
Receive File  
Baud Rate

Services:

1. Source....
2. Compuserve
3. Dow Jones.
4. MacNet
5. EasyLink..
6. Super Link
7. Crazy Link
8. TELE - MAC

**8. TELE - MAC**

DIAL  
FIRST NAME  
LAST NAME  
PASSWORD  
HANG-UP  
RESET

Done Change

Figure 2 HabaCom's small terminal window with macro buttons.

stores text to a new text file or appends text to the end of an old file. However, the information in these files can only be examined after the communication session is over.

On the negative side, besides the absence of a RAM screen buffer, HabaCom provides minimal file transfer capabilities. Although text files can be sent and received, error-correcting binary file transfer protocols do not seem to be available, or if one is available, it is unclear which it is. This means that transfers of MacPaint documents, Multiplan spreadsheets, and/or programs could be full of errors unless the transmission lines are crystal clear.

Unattended operation of HabaCom is not possible as it lacks many of the features required to perform automatically. ReDial is not available and only limited macro capabilities are provided. Six mouse-clickable buttons that appear when one of the directory entries is selected from a pull-down menu (Figure 2) can be programmed to initiate short command strings, e.g., name, password (Figure 1). But conditional commands are not included in the available set. A timer is also not available.

HabaCom provides only two terminal emulation modes, standard TTY and DEC VT 100. If your primary communication tasks involve a mainframe that thinks it is attached to something other than either of these terminals, HabaCom is useless. HabaCom is also unable to recognize control characters. Since control characters often play an important role in many BBSs and information systems (control-C might tell the other computer to stop sending or control-J might instruct your machine to clear the screen and move the cursor to the top left corner), users will have difficulty when using HabaCom with any system that makes frequent use of control characters.

One of the most disappointing features of HabaCom was its failure to work reliably at 1200 baud. Although it was able to handle text that was received at 300 baud, it often chimed its bell in a continuous drone when receiving text at 1200 baud. The noise seemed to signal HabaCom's inability to keep up with the information coming in, for the screen displayed a garbled version of the text being received. Because HabaCom cannot handle control characters, the user is forced to suffer through the light and sound show until the other computer is finished.

Another highly unusual feature of HabaCom is the manner in which it reduces the size of the terminal screen to about 3/5ths of the size of the Mac's display in order to display the macro buttons (Figure 2). So the text displayed on the screen will appear distorted. This is the only communication package that operates in this way. Its disadvantage is that many computers with which you will want to communicate will assume that you are connected with a terminal that can display a full 80 columns. Avoid HabaCom, we cannot recommend it.

#### MITE version 2.9

Mycroft Labs, Inc.

(also packaged with Novation's MacModem)

MITE is far more powerful than HabaCom. In fact, it ranks as one of the most powerful communications packages available for the Mac. Unfortunately, MITE fails to take full advantage of the Macintosh user interface. In fact, those who have used communications programs on computers other than the Mac will barely recognize that they have changed machines when they look at MITE.

The user interacts with MITE through a series of screens or non-sizable windows (much like dialog boxes), each of which contains a number of large click buttons. Some of the buttons activate and deactivate various options, other buttons bring up additional screens that display still another set of click buttons some of which control more options, and still others bring up dialog boxes with additional options (Figure 3). This nesting of command screens is similar to the nesting of menu options common in much pre-Mac software. It has the advantage of providing a well trained user with quick (keyboard or mouse) access to



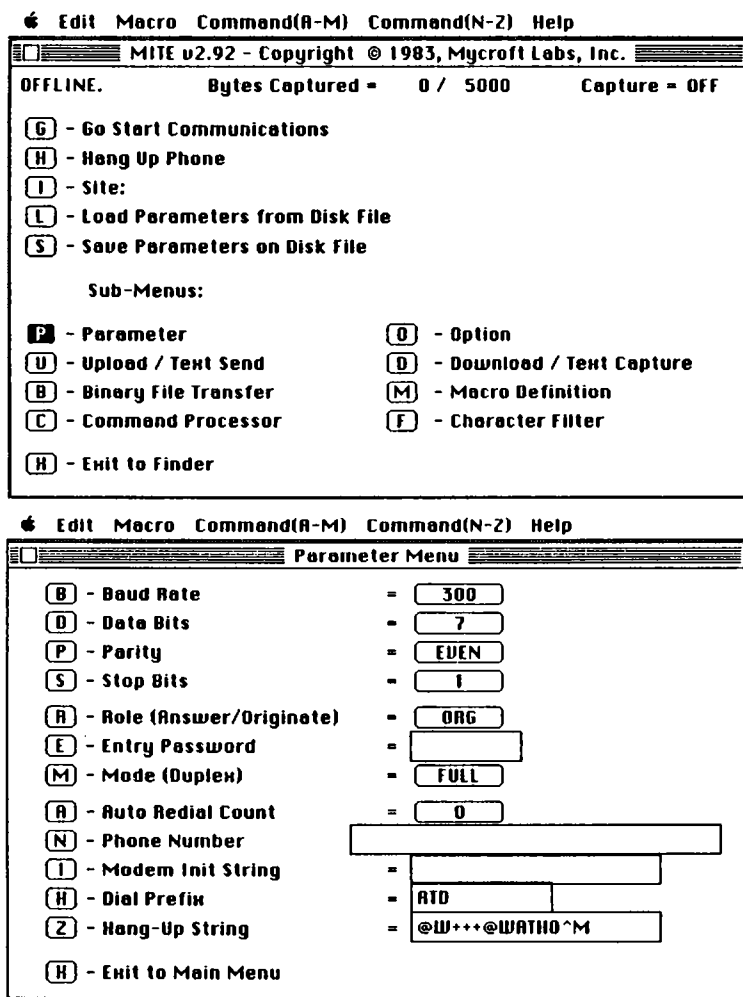


Figure 3 MITE's main click-button and communications parameter entry screens.

most of the program's commands but it usually takes people a long time to learn the system well enough to take full advantage of the command system. In addition, this style of interface does not provide the user with a single screen from which all communications functions are available. Instead, one blank screen serves as the terminal window while others present command options.

MITE does attempt to add pull-down menu commands to its screen oriented control system by providing two menu-bar options: Command (A-M) and Command (N-Z). These two menu options provide duplicates of many of the click buttons that are presented in the various screens and are intended for use primarily while on line with another system.

Possibly in anticipation of the complexity of the user interface, MITE provides rather extensive context-sensitive help files that are continuously available under one or two two pull-down menu options. The help files explain the various click button and menu commands in each screen, however most novice users would probably find these descriptions difficult to understand without first reading most of the manual.

In fact, the manual provides extensive discussion of how to use MITE to accomplish a wide range of sometimes very complex communications tasks, including how to connect to various types of computers through a large assortment of telephone networks. The inclusion of these examples is one of the best features of the MITE software package. The documentation also includes extensive discussion of how to set the built in switches

on 15 different modems and how to build cables to connect the Mac to those modems. The manual lacks an index, but the table of contents is rather detailed.

MITE can transfer all types of Mac files, including MacPaint pictures, using one of a number of different error correcting protocols. In fact, MITE is the only package that provides XMODEM/B, a binary file transfer protocol especially designed to transfer a group (batch) of files with one command. Our editor uses this protocol to send all our stories to the typesetter, who uses MITE with a Kaypro 10 which is plugged into his typesetting machine. She controls the entire operation, setting his disk drive to receive and establishing the rules for transmission. This feature allows them to do other things during the two hour transmission time. In addition, because it includes the CLINK/CROSSTALK protocol and a special command that translates Macintosh text format to CP/M and MS-DOS format, MITE is ideally suited for users who must send and receive files to computers running under CP/M and/or MS-DOS. File transfers can be accomplished at baud rates as low as 50 and as high as 19200 baud when directly connected to another computer.

A directory for autodialing and redialing is available; however, as with some other packages, the directory consists of a set of communications documents, each of which contains a host of communications information (baud rate, parity, handshaking protocol, password, character filters, macros, etc.) as well as the phone number. This directory system has the advantage of providing the user with double-clickable icons on the desktop that when opened will start MITE and load all of the settings necessary to make your system compatible with the system you are calling. For example, with the aid of the TWX setting, it is possible to construct a directory entry that configures the Mac to access any TELEX terminal in the world through the Western Union TWX network.

MITE lacks several features found in other programs, some of which may be essential for your communications needs. Although a primitive form of screen buffering is provided along with the ability to write the contents of the buffer to disk, MITE does not take advantage of the cut, copy, and paste features that are so much a part of the Mac's user interface. In addition, because there are no scrollable windows, information in the screen buffer can only be seen by issuing a Type command. Backwards scrolling is not available.

MITE includes a command that will read a previously stored file of commands and perform the commands as they are read. Although this might be useful in some situations, we feel that the this feature does not provide the capabilities of a real command language. In addition, because the macro system fails to include the ability to send macro sequences automatically in response to a long string of information (MITE can only look at one character at a time), unattended operation may not be possible in many instances. Nevertheless, the line-oriented macro system that MITE offers is of some use. Each macro line can be 60 characters long and a total of ten macro keys (or sequences) are available from a pull-down menu. One of the macros can contain an automatic log on sequence but this feature is limited by the lack of a conditional capability. Finally, because one macro line can call another macro line, it is possible to construct a sequence of commands that is close to 600 characters long and thereby perform some functions that emulate a simple command language.

MITE does not include a graphics interface or built-in timers. Users will have to content themselves with text and binary transfers and will have to be present to initiate and watch over all communications sessions. In addition, although some forms of terminal emulation can be achieved with MITE's character filters and with the ability to define the control codes for some commands, with one or two exceptions, specific terminal emulation options are missing from MITE. If your communication tasks require that you frequently call a mainframe that expects to



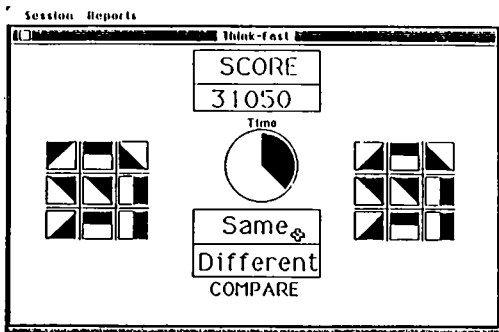


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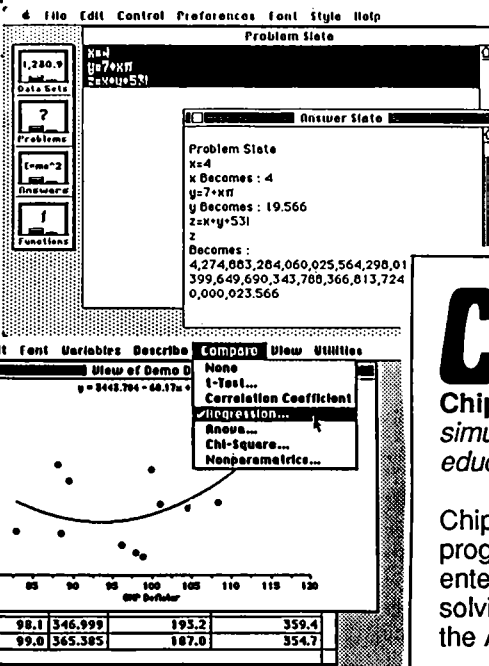
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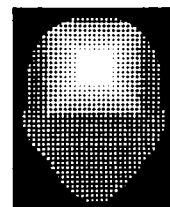
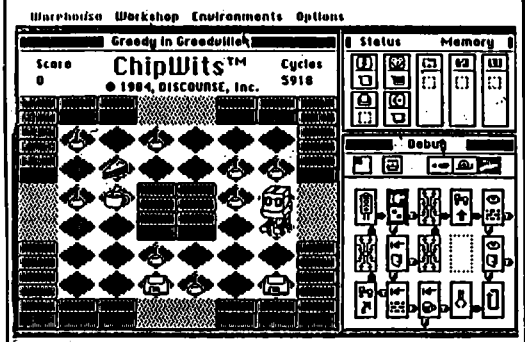


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be taking with, say, a Hewlett-Packard terminal or a Televideo 925, MITE is not for you.

In summary, we have mixed feelings about MITE. Although MITE is clearly one of the more powerful communications programs available for the Mac, its failure to conform to the Mac interface and its lack of a true command language lead us to recommend this package to a limited group of users, namely those that routinely transfer files to and from MS-DOS and CP/M machines. These users are likely to find the command screen interface familiar and will appreciate MITE's MS-DOS and CP/M compatible protocols.

#### ProCom-M version 1.6s

(Packaged with Prometheus's ProModem 1200)

Unlike MITE, ProCom-M makes full use of the Mac user interface. All commands are available either in pull-down menus or in dialog boxes. The communications window remains on the screen at all times. In addition, a status window can be toggled on and off at the bottom of the screen (Figure 4). This should make some aspects of ProCom-M much easier to learn than MITE.

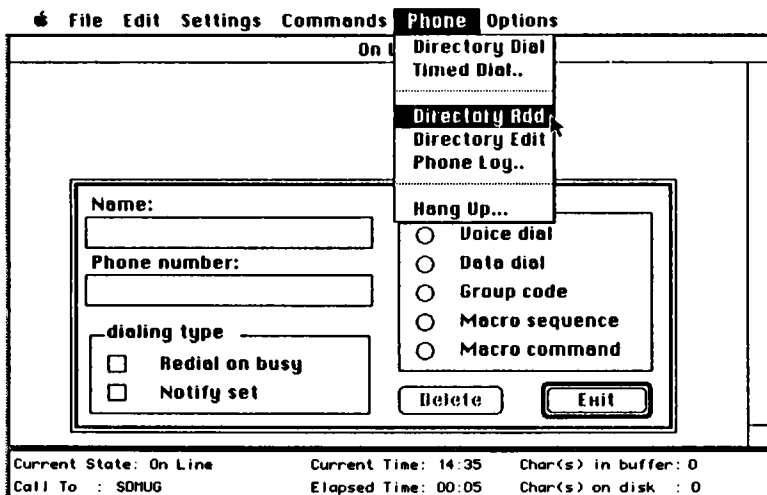


Figure 4 ProCom-M's terminal window with status bar at the bottom and with a dialog box that is used to enter directory information.

Most of the important features, for example, AutoDial, ReDial, screen buffers (including the ability to cut, copy, and paste to and from the clipboard), voice/data switching, timers, and a phone directory are supplied either as pull-down menu items or in dialog boxes. In addition, several features are unique to ProCom-M. The program automatically keeps a record of the calls that you make including who you called, when the call was made, and how long it lasted (Figure 5). Another useful feature that we wish was available in all programs is the ability to delete a file without leaving the program. There comes a time in all communications activities when disk space is too small to save crucial information and despite one's best efforts that information keeps coming over the phonenumber. The delete function means that you need not hang up, quit to the Finder, make room on the disk, reboot ProCom-M, and then redial the other system in order to save the crucial information.

Phone calls can be initiated automatically at a predefined time with the Deferred Macro Execution command. In fact, ProCom-M has the ability to dial a series or group of phone numbers and to perform the same procedure with all of them. When combined with ProCom-M's powerful (but difficult to understand) macro command system, group dialing gives the user the ability to call several different offices and deliver the same message or data to each, all late at night and completely unattended!

Our editor and several writers use ProCom-M to transmit their graphic illustrations and stories. We also use the Prometheus modem buffer board to send and receive messages.

Although ProCom-M lacks a true command language, its two macro types when used together, provide a system of automatic communications that is the functional equivalent of a moderately powerful command language. At a lower level are macro sequence files. These consist of up to eight sets of character strings (for example, "First Name?") that when sent to your Mac are to be followed by another string (for example, "George") that your Mac sends to its host. At a higher level are macro commands. These tell ProCom-M to activate previously saved macro sequences as well as to send and receive data files. Conditional commands do not seem to be available, however.

Several other features are not available in the version of ProCom-M that we examined. Only two baud rates are included: 300 and 1200. This means that it cannot take advantage of the much faster data transfer rates that are available when two computers are directly connected to each other (not through telephone lines and modems). Terminal emulation is not provided, nor is graphic interaction. Only the XMODEM protocol is provided for binary file transfers.

--- Phone Log ---				Next	Exit
Date	Time	Call To	Duration		
05/30/1984	10:25:50	Compuseru#	00:00:32		
05/30/1984	10:47:07	Compuseru#	00:03:39		
05/30/1984	11:16:43	Compuseru#	00:11:49		
05/30/1984	11:41:51	Compuseru#	00:10:13		
05/30/1984	16:21:10	Compuseru#	00:00:16		
05/30/1984	16:22:12	Compuseru#	00:00:31		
05/30/1984	16:25:25	Compuseru#	00:00:50		
07/23/1985	00:29:05	COMPUSERUE	00:00:47		
07/23/1985	00:37:53	COMPUSERUE	00:01:28		
07/23/1985	00:43:29		00:09:34		

Figure 5 Phone log that is kept by ProCom-M.

Prometheus has a bulletin board that provides free updates of ProCom-M, a nice feature in their user support. You merely run the Prometheus BBS macro and once connected select Get Update from under the File menu.

Although it can be purchased separately, we feel that ProCom-M is best suited for use with the Prometheus ProModem. For example, one command allows the ProModem's built in hardware clock to be set. Another opens a dialog box that sets the default conditions of the modem (the equivalent of setting switches that define the wake-up state of the modem when it is turned on). Even the Mac to ProModem cable that is supplied with the modem is wired in such a manner that some other communications software will not work properly with the ProModem.

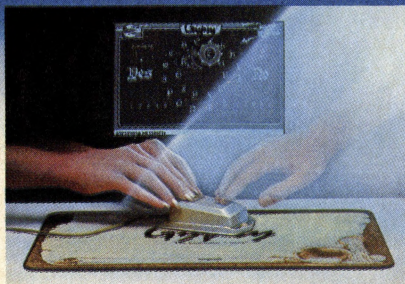
As with MITE, our recommendations with regard to ProCom-M are mixed. There is no question that ProCom-M should be avoided by those needing terminal emulation or those requiring error correcting protocols other than XMODEM. On the other hand, users who need to repeatedly send and receive files from one or more offices or information services that have the XMODEM capability and wish to automate that process should find this program/hardware combination capable of solving almost all of their communication needs.



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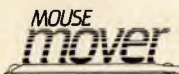
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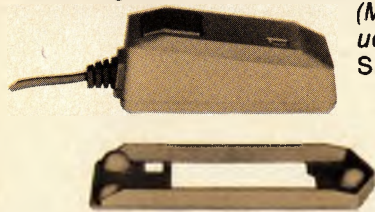
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## Telescope

Telescope is another powerful communications program that contains most of the standard features as well as several that are unique. In addition to AutoDial (with a directory limited to only 20 names, all of which are simultaneously displayed in one screen) and ReDial, Telescope contains a wide range of communications protocol settings and can handle transmission speeds as high as 9600 baud. Two text protocols are provided: standard ASCII and CompuServe's special ASCII (DC2/DC4). Binary transfers can be accomplished in XMODEM or in MacBinary.

By far the most outstanding feature of Telescope is its extremely versatile terminal emulation capability. Telescope is the only communications program that employs a terminal emulation language (dialog box in Figure 6). Virtually any non-graphic terminal can be emulated. In addition, the instructions that define how your keyboard and screen will behave are automatically loaded along with the telephone number when a directory entry is selected. Thus, one can easily switch between a call to an office IBM mainframe and a call to the local Mac BBS.

The terminal emulation language includes the capability of defining and naming a set of function keys that appear at the bottom of the communications window (Figure 6). When calling CompuServe, for example, one function key might be labeled MAUG (Micronet Apple Users Group) and contain the macro "GO MAUG cr."

Another unique feature of Telescope is its ability to draw pictures on another Mac's screen using its own Graphics Applications Language (GAL). Although primarily designed for users who are interested in programming, GAL adds a feature that is missing from all other packages. By writing a sequence of instructions (e.g., #GAL; PS3,5; PM8; PO20,30,200,250; #), it is possible to send a GAL instruction file that when received on another Mac running Telescope will draw a picture, say of an oval, rather than type a string of words. Although there may be some users who would benefit from Telescope's GAL, we think most will find that the effort of writing the instruction sequence and the need for the other Mac to be running Telescope will prevent them from taking advantage of this feature.

A feature that is likely to be of use to many telecommunications is Telescope's built in mini-BBS. When the E-Mail menu option is selected, Telescope enters a message service mode. In this mode, Telescope will wait patiently for another computer to call your Mac's modem. When a call comes in, Telescope will automatically answer the phone and send a message to the calling computer telling it that it is connected to your system. At that point users at the other end can read a message that you left for them, leave a message for you, download a file or program from your machine to theirs, upload a file or application to your machine, and/or enter a Chat mode in which you and the caller can type messages to each other in real time. The mini-BBS system includes its own editor that is used to create messages. As a result, the message that you leave for callers and the ones that they leave for you cannot be edited with standard text editors. In addition, access to the message system is controlled by passwords that you can give out as needed to prevent unauthorized individuals from gaining access to the system and then performing a general lobotomy on it.

Telescope has one of the most powerful line-oriented macro systems of those reviewed. A macro directory can include up to ten macro lines and each macro line can contain as many as 80 characters. The macro commands include a thorough set of conditional commands that includes the ability to transfer control to any given macro line as well as to jump to a particular part of a current line. Two types of jump commands are available: one returns control back to the macro that initiated the jump command and the other does not. These features allow the user to perform almost all of the most complicated dial and log on sequences automatically.

Another useful feature of Telescope's macro system is that the user can change macro directories while on line with another system. This means that the set of macros that are available to the user can be conditioned to the host's environment. For example, a user might wish to have several different sets of macros available when calling CompuServe. One set could be used when on MAUG but another set might be useful in CompuServe's electronic shopping mall.

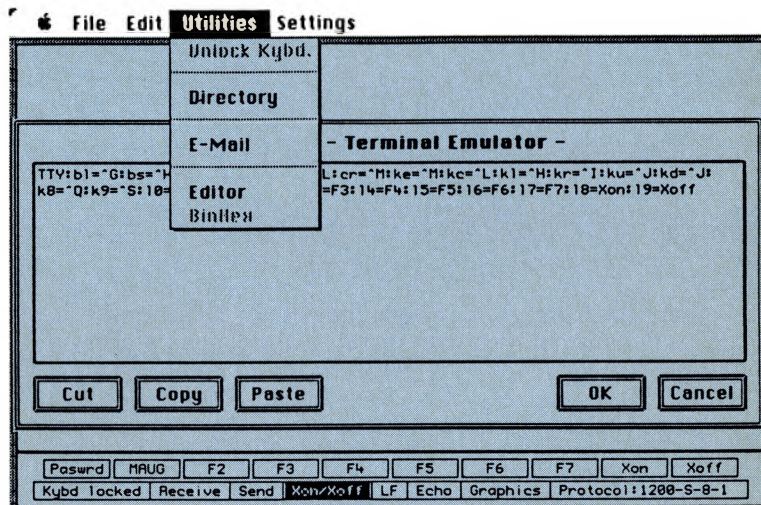


Figure 6 Main terminal window of Telescope showing status bar with macro keys at the bottom and overlay of window used to edit and display terminal emulation language for the selected directory entry.

Despite these powerful elements, Telescope lacks several features that are required by some users. Unattended operation is not possible because built in timers are not provided. In addition, a voice/data switch is not available making some types of communication more complicated than they need to be. More importantly, Telescope fails to provide either a screen buffer or the ability to capture information to a disk file. Although text and programs can be sent and received as files, it is not possible to save the text or graphic information that is displayed on the screen during a communication session. This can be a problem when gathering information from such systems as CompuServe. Often important information is sent to the screen of your machine and is not available as a file. In such cases, you will be forced to either remember or write down the information as it is displayed. Unfortunately, the inability to cut, copy, and paste information to and from the terminal screen compounds this problem.

We think Telescope is the ideal hackers communications program. Its extensive terminal emulation facilities should make connection to any mainframe easy and the extensive macros should be capable of automating even the most complicated log on procedures. The inclusion of GAL and the mini-BBS should also be appreciated by most hackers. Although most novice users will find the manual weak in some areas, the seasoned hacker will have no difficulty following the information that is provided. The fact that Telescope is completely RAM based (once it is running it doesn't have to go back to disk) and is therefore faster than other communications packages should be most beneficial to those who intend to use Telescope in an attended mode. Partly because Telescope is not capable of unattended operation, business users who wish to automate complicated file transfer and message exchanges with several different systems will probably find other programs better suited to their needs.



## Red Ryder version 6.2c )

Red Ryder is unique among the communications packages reviewed here for a number of reasons. First, it is the only package that is available as "honorware," the try before you buy marketing concept that is so popular among user groups. The program is given away to anyone who will take it and the author, Scott Watson, encourages users to give copies away to their friends. Those that use and like it are asked to send \$40.00 to Scott to register the product. Second, Red Ryder has a long and interesting history of development that goes back to the earliest days of the Mac when the only communications software that was available were programs written in Microsoft Basic 1.0. Third, Red Ryder is an evolving product. Scott is on Delphi (an information service similar to CompuServe) almost every day getting feedback from users about improvements that they would like to see in the software. Fourth, Red Ryder's manual consists of 62+ pages of MacWrite documents, included on the program disk, that users must print out themselves. Obviously, Red Ryder is as much a labor of love as it is a money making proposition for Scott.

Red Ryder is a powerful communications package. Autodial and redial directories are included but only as double-clickable documents on the desktop. The usual set of communications protocol options (e.g., 300—9600 baud, and Mark and Space parity for use with IBM and some Hewlett-Packard mainframes) are provided as well as three popular binary file transfer protocols, namely, XMODEM, Kermit, and MacBinary. Text file transfers can be achieved in a wide variety of formats including with and without all control characters removed and with or without line prompts. (In text file transfers, your machine delays sending a new line of text until it receives a known prompt character from the other machine.) Screen buffering can be turned on or off with a Remember Screens menu option that

presents a dialog box asking how many screens you want to save. Screens can also be automatically archived to a disk file. Screen information that is buffered can be scrolled backwards (one 24 line screen at a time) and examined but it cannot be cut, copied, nor pasted to the clipboard. As with ProCom-M, Red Ryder can delete a file while on line with another computer.

Red Ryder only includes a limited set of built in terminal emulations, namely DEC's VT100 and VT52. Although the number is limited, the VT100 emulation is quite complete including cursor movement function keys, graphic character sets, and full use of the Mac's numeric keypad option.

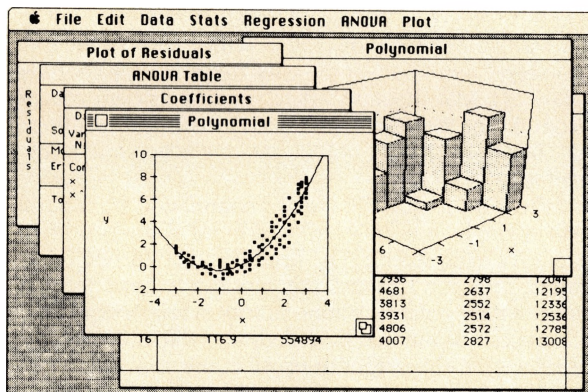
The current version of Red Ryder does not support an interactive graphics mode but Scott has indicated that in the near future it may be possible to use Red Ryder to call a specially designed BBS that will directly access the Mac's QuickDraw ROM routines. If this comes to pass, telecommunications on the Mac will look and act very much like the Mac's desktop. The machine that you call will draw icons and menu bars on your machine rather than sending text only.

Unattended operation of Red Ryder is possible both because of its very sophisticated line-oriented macros and command language (including conditionals) and because it includes a built in clock/timer. A total of ten macros consisting of 40 characters per macro can be defined and saved as macro files. Macro files can be loaded at any time while on line with another machine. The first few lines of each macro can be displayed in a Macro Status Bar that appears at the top of the communications window. Clicking any of the macro boxes displayed in this bar will activate the macro. Macros can call automatic communication procedures that have been previously written with the command language and saved to disk as separate files.

The command language includes a large number of command types, including conditionals, making almost all types of automatic operation possible. Multiple numbers can be dialed, files

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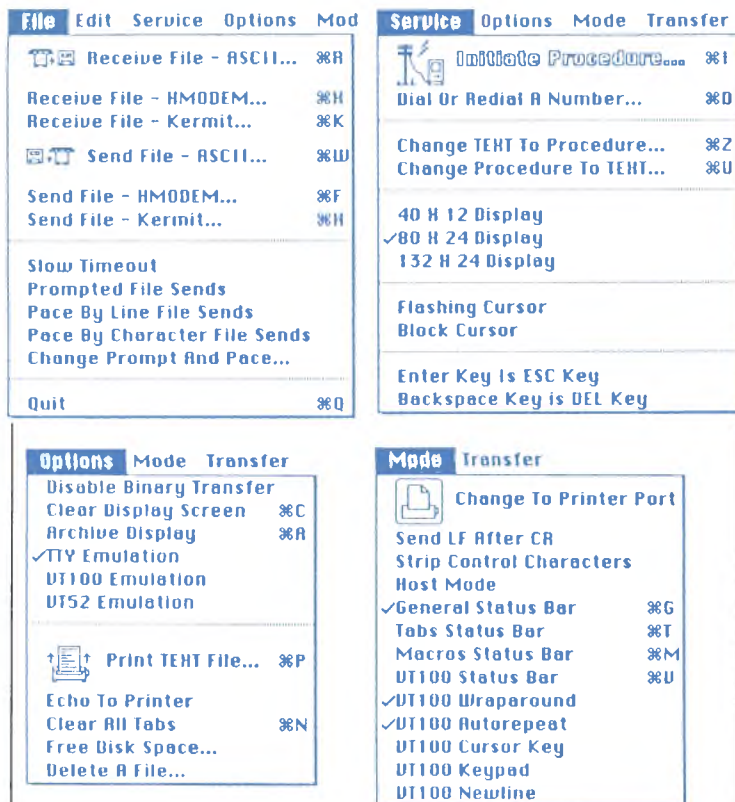


Figure 7 Four of the most used pull-down menus in Red Ryder.

can be sent and received using any of the available protocols, specific words or characters can be checked for, and different procedures can be performed depending on the incoming information. In short, Red Ryder's macro and command language is as powerful as any we have seen.

Overall, we think that Red Ryder offers the best value of all of the communications packages that we have reviewed here. Nevertheless, it may not be suitable for many users. Although it attempts to conform to the Mac's user interface, the design of its menu options (Figure 7), its lack of on line help files, and its unprofessional documentation will make it difficult to learn for many novice users. In addition, its limited terminal emulation capabilities could be a problem for some advanced users. Red Ryder's failure to utilize the Mac's clipboard might be a drawback for users who like to compose and edit messages while on line with another machine although text editing desk accessories such as MockWrite somewhat reduce the importance of this limitation. Finally, the nature of the "honorware" distribution system may make some high-powered business users prefer to go elsewhere because of the unpredictability of future product support. Because of these concerns, we restrain our enthusiasm for this program and recommend it only to those intermediate to advanced Mac users whose primary communications tasks involve the uploading and downloading of files and messages to local BBSs and information services, such as, CompuServe and the Source.

#### Smartcom II

Smartcom II's distinguishing features are its ease of use and its attempt to take full advantage of the Mac's graphics interface while not giving up too much power in the process. In contrast to Red Ryder, Smartcom II is ideal for the novice user who would like to enter the world of communications but does not wish to learn the jargon or a non-English command language.

Smartcom II's ease of use and emphasis on graphics begins with its easy to read and high-gloss, magazine-style manual. Index tabs provide instant access to its main sections and a quick reference guide gives brief but clear visual reminders of the main program functions. Should the manual be out of reach at a critical point in a communication session, context sensitive help is one click of an icon away at all points in the program.

Hayes has embraced the Mac's graphics capabilities to the fullest extent. Even when the program is first run, the user is greeted with an animated display in which parts of the Smartcom II screen "zoom out" at the user from their positions on a 3D picture of a Mac that appears to running its own version of Smartcom II. For those who find such artistic features tiresome, a single click of the mouse will bypass the action and bring up the main screen.

All of the most frequently needed commands are instantly available as single or double clickable icons at the bottom of Smartcom II's main screen. The printer can be turned on or off, data can be captured to a disk file, files can be sent or received, help is instantly available, phone numbers and special dialing instructions can be entered or dialed, and the interactive graphics screen can be brought up all at the click of one of the almost self-explanatory icons (Figure 8). Smartcom II has most of the major features that characterize the better communications software. AutoDial and ReDial are available as are phone directories consisting of double-clickable desktop files containing all of the protocol information necessary for communications with various hosts. Once a terminal file has been defined and saved to disk, the user merely double-clicks the icon and Smartcom II boots up with all of the settings ready to go. Baud rates from 110 to 19200 are provided.

A few options specific to the Hayes Smartcom 1200 modem can be set in a dialog box that appears when the Modem Settings option is selected from one of the pull-down menus. Such things as the delay between tones in touch-tone dialing, the

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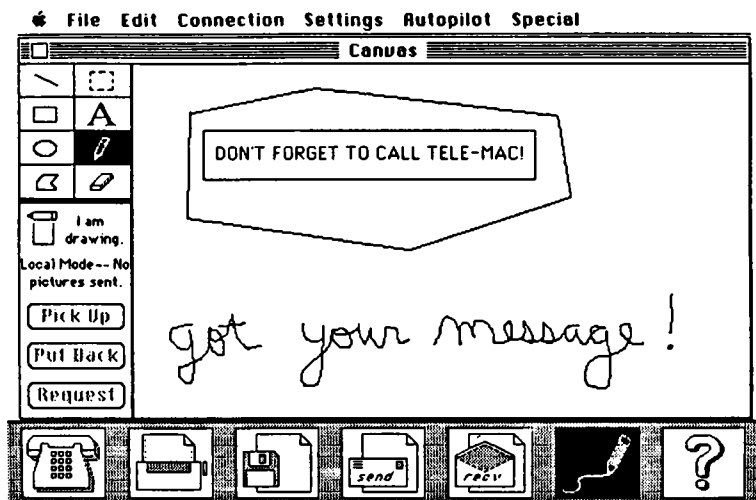


Figure 8 Smartcom II's interactive graphics palette with the main command icons at the bottom of the screen.

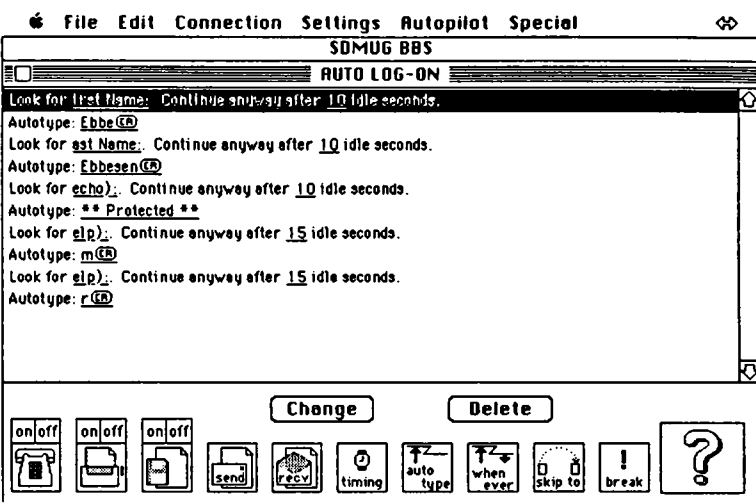


Figure 9 Smartcom II's autopilot command language entry window with command icons at the bottom of the window and with an example autopilot that automatically signs one of the authors onto a local BBS and reads his mail. Note that his password is not displayed.

time to wait without a carrier before the modem decides that it has lost the line, and speaker settings are also presented. There is even a choice of carrier types: Bell and CCITT.

A screen buffer with full backward scrolling is provided and as already noted, information can be captured to a disk file merely by clicking the Disk icon at the bottom of the terminal screen. Copying and pasting to and from the clipboard while on line or off line is also provided. Voice/data switching is included as a pull-down menu option.

A wide selection of text and binary file transfer protocols are built in. For the former, prompted and timed line-by-line and character echo protocols are added to an Xon/Xoff flow control option. For the latter, you can use XMODEM, MacBinary, MacTerminal, and (not surprisingly) Hayes's very own error correcting protocols.

Several features are unique to Smartcom II. It is the only program we examined that offered the choice between two font styles, small (Monaco 9pt) and large (Monaco 12pt). Far more interesting is the fact that Smartcom is the only program that

does not have macro capabilities but does have a command language. Furthermore, because the command language makes full use of icon commands, it is by far the easiest of all of the command languages to learn.

When you select the Autopilot menu option, a new set of icons are presented at the bottom of a new autopilot sequence screen (Figure 9). A click on any one of the icons either opens a dialog box that asks for additional information or immediately installs an English command in the current sequence. For example, a click on the icon labeled Timing gives you the option of waiting for a particular time of the day, until a length of time has passed, or until a certain string of characters are received. Another icon installs an instruction to jump to a different autopilot sequence already stored on disk. Still other icons turn the printer and file sends and receives on and off. In short, with the exception that conditional commands are missing, it is possible to construct a communications procedure capable of unattended operation just by clicking icons and filling in a few dialog boxes. Best of all, the sequence of commands that you have created with the icons are saved as easily understood English sentences.

Despite the conspicuous absence of conditional commands, Smartcom II's autopilot system is remarkably powerful. A procedure capable of multiple file transfers using different protocols can be constructed by jumping to different autopilot sequences. A series of phone numbers, each with their own protocol settings, can even be dialed. On the other hand, the lack of macro keys and the inability to delete files from disk makes attended operation of Smartcom II considerably less efficient than attended operation of other communications programs.

Another feature that stands out as unique is Smartcom II's ability to graphically interact with another Mac that is also running Smartcom II. Selection of the pencil icon brings up a graphics window in which graphics images that are either pasted onto the screen from the clipboard or drawn using a primitive set of MacPaint-like tools simultaneously appear on the screens of both Macs (Figure 8). By mouse selectable commands, two users can transfer control of the drawing palette from one Mac to the other. In this way, you could paste a chart that you previously created with MS Chart onto the palette and then the person at the other Mac 1000 miles away could add or subtract text or graphics to the chart. Finally, both of you could save the jointly finished product to your own disks. Smartcom II even comes with a chess set palette of pictures that allows its users to play chess by phone using and seeing the "same" electronic chess board and pieces.

We do not hesitate to recommend Smartcom II to the majority of novice users. Most will not out grow Smartcom and few will have communications tasks that Smartcom II cannot handle. The ease with which most will learn Smartcom and then make it perform complex tasks automatically makes Smartcom one of the highlights of our study. In addition, Smartcom II is the only program that gives you a true, interactive graphics capability. On the other hand, those who need sophisticated terminal emulation, who routinely engage in communications with systems that require conditional responses, or who want powerful macros that are a click of the mouse button away will not be happy with Smartcom II.

#### inTouch version 2

With one or two exceptions inTouch may provide the best of almost all worlds to almost all users. Although it is not as easy to learn as Smartcom II, it is not as hard to learn as MITE or ProCom-M. Although it doesn't have a terminal emulation language as does Telescape, it has the ability to emulate about eighty percent of the terminals that are available through a carefully selected set of built in emulations. Its command language is not as easy to use as Smartcom II's, but the language provided is far more powerful—in some ways even more powerful than that supplied by Red Ryder. It does not employ icons at the bottom



# Magnificent

✓denotes Mac XL compatibility.

## SOFTWARE

<b>Altsys</b>	
Fontastic (create your own fonts)	\$27.
<b>Arrays/Continental</b>	
Home Accountant	52.
<b>Assimilation</b>	
✓Mac-Memory-Disk	22.
✓Mac-Tracks	22.
✓Mac-Spell-Right	69.
<b>Blyth Software</b>	
✓Omnis 2 (requires external drive)	139.
✓Omnis 3 (requires 512k, external drive)	249.
<b>Borland International</b>	
✓Sidekick (non-protected)	44.
<b>BrainPower</b>	
✓PowerMath (symbolic problem solving)	52.
✓Statview (statistics package)	99.
<b>Casady Company</b>	
✓Fluent Fonts (two-disk set)	29.
<b>Central Point Software</b>	
Copy II Mac (includes MacTools)	20.
<b>Creighton Development</b>	
✓Mac Spell+ (requires 512k)	55.
<b>DataFood</b>	
✓DrawForms (requires MacDraw)	30.
✓MacForms (requires MacPaint)	42.
<b>Digital, Etc.</b>	
✓Maccountant	139.
<b>Dreams of the Phoenix</b>	
✓Day Keeper Calendar	27.
✓Mouse Exchange BBS	27.
✓Quick & Dirty Utilities Vol. 1	27.
✓Twelve-C Financial Desk Accessory	27.
<b>Electronic Arts</b>	
Pinball Construction Set	27.
Financial Cookbook	32.
Deluxe Music Construction Set	32.
<b>Enterset</b>	
✓Quickpaint	29.
✓Quickset 2.0	29.
✓Quickword	32.
<b>1st Byte</b>	
Speller Bee (improves spelling)	42.
KidTalk (talking "notebook")	42.
Smoothtalker 2.0 (voice synthesis)	57.
<b>Forethought</b>	
✓Typing Intrigue	29.
✓Factfinder	84.
✓FileMaker	108.
<b>Great Wave Software</b>	
ConcertWare+	39.
<b>Hayden Software</b>	
DaVinci Buildings	29.
DaVinci Interiors	29.
DaVinci Landscapes	29.
DaVinci Building Blocks	46.
DaVinci Commercial Interiors	114.
Art Grabber w/Body Shop	29.
I Know It's Here Somewhere	35.
Musicworks	45.
Hayden:Speller	45.
Videoworks	57.
Score Improvement System for the SAT	57.
Ensemble	155.
<b>Hippopotamus Software</b>	
Hippo Computer Almanac	21.
Hippo-C - Level 1	79.
Hippo-C - Level 2	219.
<b>Ideaform</b>	
✓MacLabeler (prints disk labels)	29.

<b>Innovative Data Design</b>	
✓Paste-Ease (requires MacPaint)	\$35.
✓MacDraft (requires 512k)	139.
<b>Kensington</b>	
✓Graphic Accents	29.
✓Professional Type Fonts for Text	29.
✓Professional Type Fonts for Headlines	42.
<b>Linguist's Software</b>	
✓Tech (1000 different symbols)	69.
✓MacHebrew	69.
✓MacKana/Basic Kanji	69.
✓MacKorean	69.
✓MacSuperFrench/German/Spanish	69.
✓MacSuperGreek	69.
✓MacGreek/Hebrew/Phonetics	119.
<b>Living Videotext</b>	
✓ThinkTank 512k	125.
<b>Magnum</b>	
✓McPic - Volume 1	28.
✓McPic - Volume 2	28.
✓The Slide Show Magician	34.
<b>Manhattan Graphics</b>	
✓ReadySetGo 2.0 (requires 512k)	65.
<b>Mark of the Unicorn</b>	
Professional Composer 2.0 (reqs. 512k)	249.
<b>Microsoft</b>	
Entrepreneur	29.
Learning Multiplan and Chart	37.
Chart	72.
Logo	75.
Basic (version 2.1)	87.
Multiplan	107.
File	111.
Word	111.
Fortran	179.
Excel	225.
<b>Miles Computing</b>	
✓Mac the Knife - Volume 1	21.
✓Mac the Knife - Volume 2 (fonts)	25.
<b>Mindscape</b>	
✓The Perfect Score: SAT	47.
<b>Monogram</b>	
✓Forecast	40.
✓Dollars & Sense	81.
<b>Nevins Microsystems</b>	
Turbocharger (requires 512k)	55.
<b>New Canaan MicroCode</b>	
Mac Disk Catalog	25.
<b>Odesta</b>	
✓Helix (requires 512k, external drive)	219.
<b>Organizational Development Software</b>	
✓Consultant (idea management)	119.
<b>Palantir</b>	
✓MacType (supports Dvorak keyboard)	26.
✓MathFlash	26.
✓WordPlay	26.
Accounts Receivable (requires Basic)	69.
General Ledger (requires Basic)	69.
Inventory Control (requires Basic)	69.
<b>PBI Software</b>	
✓Icon Switcher	14.
✓Icon Fun & Games Library	14.
✓Icon Business Library	14.
<b>Peachtree</b>	
✓Back to Basics General Ledger	88.
✓Accounts Payable	88.
✓Accounts Receivable	88.
<b>ProVUE Development</b>	
✓OverVUE (version 2.0)	149.
<b>Reston Publishing</b>	
Construction Estimator (reqs. Multiplan)	45.

<b>Rubicon Publishing</b>	
✓Dinner at Eight (recipes to wines)	\$35.
<b>Scarborough Systems</b>	
MasterType (arcade action)	25.
<b>Silicon Beach Software</b>	
✓Accessory Pak 1	24.
<b>Simon &amp; Schuster</b>	
Paper Airplane Construction Set	24.
The Mac Art Department	24.
Typing Tutor III	31.
<b>SoftStyle</b>	
Epstart	27.
Decision Map	79.
<b>Symmetry</b>	
✓QuickDisk (requires 512k)	21.
<b>T/Maker</b>	
✓Click Art Personal Graphics	29.
✓Click Art Publications	29.
✓Click Art Letters	29.
✓Click Art Effects	29.
✓ClickOn Worksheet	46.
<b>Think Educational</b>	
✓Mind Over Mac (five games)	29.
✓MacEdge II (math and reading)	29.

## GAMES

<b>Aegis Development</b>	
MacChallenger (flight simulation)	23.
<b>Blue Chip</b>	
✓Millionaire (stock market)	30.
✓Tycoon (commodities)	30.
✓Baron (real estate)	30.
✓Squire (personal finance, reqs. 512k)	30.
<b>BrainPower</b>	
✓Think Fast (improve your memory)	23.
✓Chipwits (robot adventure)	26.
<b>Broderbund Software</b>	
Lode Runner	24.
Cyborg (sci-fi text adventure)	24.
<b>CBS</b>	
✓Murder by the Dozen	25.
<b>Gamestar</b>	
Championship Star League Baseball	22.
<b>Hayden</b>	
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<b>Infocom</b>	
✓Seastalker (junior)	24.
✓Cutthroats (standard)	24.
✓Enchanter (standard)	24.
✓Hitchhiker's Guide (standard)	24.
✓Planetfall (standard)	24.
✓The Witness (standard)	24.
✓Wishbringer (standard)	24.
✓Zork I (standard)	24.
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✓Zork III (advanced)	27.
✓A Mind Forever Voyaging (advanced)	27.
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✓Sorcerer (advanced)	27.
✓Suspect (advanced)	27.
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✓Starcross (expert)	29.
✓Suspended (expert)	29.
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✓Mouse Stampede	23.
<b>Miles Computing</b>	
✓MacAttack (tank simulation)	27.
Harrier Strike Mission	27.
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✓Déjà Vu (murder mystery)	33.



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✓Xyphus ..... 24.

## Priority Software

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✓Gateway ..... 25.

## Psion

✓Psion Chess (3D chess) ..... 35.

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## Sierra On-Line

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Mac-Daisywheel-Connection ..... 79.

Mac-Turbo-Touch ..... 89.

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Mac to Epson FX/JX/LX printer cable ..... 16.

Mac to Hayes Smartmodem Cable ..... 16.

Mac to Apple Modem Cable ..... 16.

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Diamond (six outlets) ..... 28.

Emerald (six outlets; 6 ft. cord) ..... 34.

Sapphire (three outlets; EMI/RFI filter) ..... 44.

Ruby (six outlets; EMI/RFI filter, 6 ft. cord) ..... 50.

### Epson

FX-85 ..... call

FX-185 ..... call

JX-80 ..... call

LX-80 ..... call

LQ-1500 (letter quality dot matrix) ..... call

### Hayes

✓Smartmodem 300 ..... call

✓Smartmodem 1200 ..... call

✓Smartcom II (communications software) ..... 86.

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Bernoulli Box (5-megabyte storage) ..... 1315.

5-meg Cartridge ..... 39.

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Imagewriter Dust Cover ..... \$9.

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**Fuji 3 1/2"** (box of 10) ..... 22.

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ColorPack ..... 19.

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Imagewriter Cover ..... 11.

Wide Imagewriter Cover ..... 13.

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Laserwriter Cover ..... 17.

Mac XL & Keyboard Cover ..... 20.

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Imageware (Imagewriter case) ..... 39.

Imageware (Wide Imagewriter case) ..... 45.

Macinware (Mac carrying case) ..... 49.

### Innovative Concepts

Flip & File (holds 25 disks) ..... 9.

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# MacConnection™

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of its terminal screen, however, it does give the you a programmable set of user-labeled function keys that are more capable than the macros supplied by all other communications programs. Although other programs supply baud rates that are less than inTouch's minimum of 300 baud, none of the other programs match inTouch's highest rate of 57600 baud.

As should be obvious from the preceding paragraph, inTouch supplies most of the features necessary for accurate communications, including an almost complete set of text file transfer and communications protocols. Binary file transfer protocols include MacBinary, XMODEM, Crosstalk, and inTouch's own protocol. A 400 line screen buffer with full clipboard compatibility is part of the package. Capturing of text information to disk is accomplished as the text is being received by the Append Text to File menu selection or after the text is received by highlighting a portion of the text in the screen buffer and either saving it in its own file or appending it to another file. Alternatively, inTouch's ability to use the clipboard can be combined with its unique built in memo writing and editing window. A option in the menu bar opens a window that can be used as a mini text-only word processor. You can use it to write and edit a quick reply to a message and then use the clipboard to send the entire composition to the other computer.

Complete unattended operation of the most complicated communications tasks can be achieved with inTouch because of its sophisticated command language and built in clock/timer. The commands provided in the language give you the ability to dial and redial complicated sequences of numbers, to wait for a specified string of characters, to wait for a string that is automatically defined by information already received by your Mac, to wait until no new information is receive for a given length of time or just until a specified time has passed, to send and receive files using any of the available protocols, to jump to different parts of the procedure conditional on tests of incoming information, to decrement and increment counters, to perform another command procedure already saved to disk as a subroutine, to display a dialog box that asks you for a response and then stores that response in a variable or function key, to redefine the label of and commands associated with any set of function keys at any time, to record the current date and time and depending on their values cause different events to occur, to detect whether your modem made a connection with another machine, to turn your printer on and off, and many more, all completely unattended. Whew!

Your attended operation of inTouch will also be a breeze if you use the four levels of eight programmable function/macro keys to their full potential (Figure 10). The power of inTouch's function keys comes not so much from their ability to send a predefined sequence of characters (say, a password) but rather from their ability to change the labels and functions of the eight visible functions keys by shifting to any one of four different levels and, most importantly, from their ability to execute any previously defined command language routine, even one that creates an entirely new set of all four levels of the eight function keys. In short, by using the latter capability, you can define a set of function keys (limited in number only by disk space) that automatically performs the most complicated communications tasks at the click of a mouse button and that redefines itself according to the communications environment. As concrete example, it is possible to program the functions keys so that their functions change according to the area of, say, CompuServe that you are communicating with. One set of keys might appear when trying to get airline schedule information, another might appear when trying to download stock market information, and still another might appear when trying to read the latest news on MAUG. The possibilities are truly limitless.

Of course, like all software, inTouch is not perfect. It lacks the ability to delete files while on line and the screen buffer is smaller than some other packages. A mini-BBS is not provided

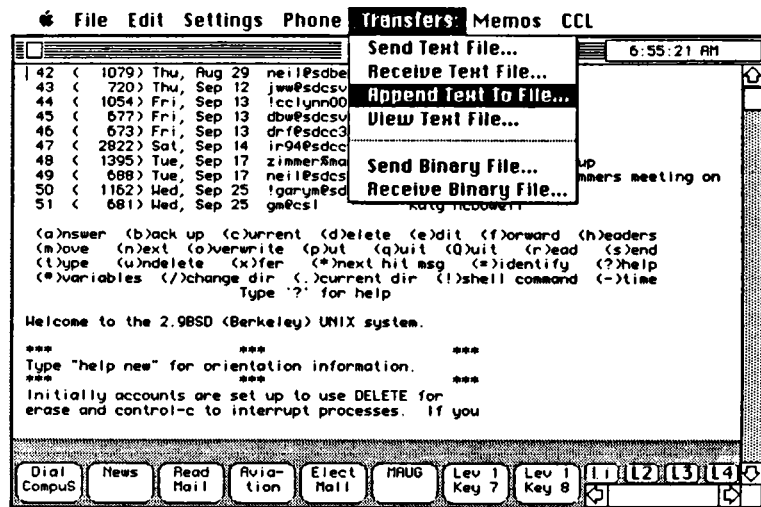


Figure 10 inTouch's terminal screen with user-labeled function keys at the bottom.

(although the developer, George Cowsar, suggested that it may be available in future upgrades). In addition, because there are no provisions for graphics interaction, with one unique exception, the only method to share graphics is via binary file transfers. The exception is that inTouch is the only communications program that includes VIDTEX, CompuServe's graphics terminal protocol, as one of its built in terminal emulation options. This means that you can call CompuServe and receive pictures (advertisements, weather maps, graphs) as well as text on your screen. You cannot interactively alter those pictures as you can in Smartcom II's graphics mode, but you will see them on your Mac while on line with CompuServe.

We like inTouch. We do not hesitate to recommend this program to almost all users. Although it will take some time for all but the most advanced users to take full advantage of the command language and programmable function keys, the payoffs are so dramatic that we think the benefits far outweigh the added difficulty of learning how to use inTouch. Unfortunately, because it was not yet complete, we cannot tell you whether the manual will help guide you through all of the program's many features. On the other hand, the one chapter that we did see suggests that the manual will be quite good.

## Versa Term

VersaTerm has several features that distinguish it from the crowd of communications programs that we have examined in this review. These features make VersaTerm an ideal choice for users who spend most of their computing time attached to a mainframe that thinks it is talking to either a DEC VT100, a Data General D200, or a Tektronix 4014 graphics terminal. In fact, although VersaTerm is missing some of the features that we think are important in communication programs, it is the only software reviewed here that is capable of emulating the Tektronix terminal. This is enough reason for some users to choose VersaTerm as one of their communications programs.

Graphics terminals work with mainframes that draw charts, graphs, and line drawings of objects. Users will run programs on, say, a UNIX mainframe and interact with those programs with their Macs. They may be able to plot data, rotate 3D objects, or perform other graphics manipulations on the mainframe. The advantage of performing these tasks with a Mac instead of a Tektronix 4014 is that once the graphic is sent to the Mac, the user can save the image as a MacPaint picture and then from there use all of the Mac's graphic software to refine the output.

In addition to providing a graphics terminal emulation, VersaTerm offers a variety of features that improve its utility. It has

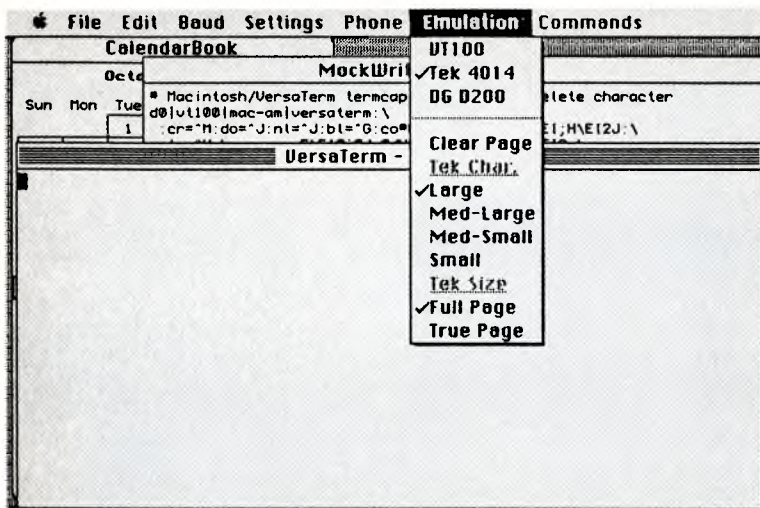


Figure 11 VersaTerm's Tektronix 4014 graphics terminal emulation window in the foreground and two desk accessory windows in the background.

an eight entry phone directory with AutoDial and ReDial capabilities. The names associated with each of the phone numbers appear in a pull-down Phone menu. With this method you have instant access to the entire directory as well as the terminal settings that are expected by the system you are calling. Eight simple line-oriented macros are handled in a similar manner. You enter a macro sequence (up to 128 characters long) in one of eight lines in a dialog box and the first few characters of the macro appear in a Command pull-down menu.

One of the more interesting aspects of VersaTerm is that it is the only package in which you can move the terminal window around on the screen. This feature can prove to be quite handy if you are using VersaTerm with one or more desk accessories and wish to keep their windows open while online with another computer system (Figure 11). In addition, VersaTerm provides separate screen buffers for all three of the emulation modes so that it is possible to switch from one emulation mode to another and find the old screen information, including graphics, still waiting for you when you switch back. The text in the VT 100 and DEC D200 emulation windows can be copied and pasted to and from the clipboard and the pictures in the Tektronix mode can be saved directly to MacPaint files. Highlighted text can also be sent to a printer.

Text and binary file transfers are also provided by VersaTerm. For the former you will find some but not all of the protocol options offered by other packages. For the later, MacBinary, Kermit, and XMODEM are provided. Baud rates from 300 to 19200 are selected from a pull-down menu. It is sometimes handy to know the time of day or how long you may have been connected to a mainframe so you can estimate connect-time charges. VersaTerm solves these problems with two desk accessories. One is a timer and the other displays the time of day. These timers are for display only and cannot be used to control automatic operations.

VersaTerm is an ideal communications program for users who do most of their computing on mainframes and use the Mac primarily as a smart terminal. These users will not need the fancy command languages that allow unattended operation. In addition, switching from voice to data doesn't make sense if the only thing you do is call mainframes. Keeping these facts in mind, we feel confident that mainframe users will find Ver-

## VersaTerm Is Truly Versatile

Just as we were going to press, Lonnie Abeleck, who designed and programmed VersaTerm, called to tell us about his updated version 2.0 which is now available from Peripherals, Computers and Supplies. Here are the significant new features:

- **Printer Support** includes ImageWriter, LaserWriter, AppleTalk and Diablo 630 letter quality printer drivers.

- **Emulation.** If you have enough memory in RAM, you can have up to 384 lines off the top.

- **Text Window** can now be made smaller as well as moved around. You can "save select" directly to another file and can append a selection to a textfile.

- **Supports VT52 emulation.** It has an improved DT200 to make it a complete emulation.

- **Communication and File Transfer.** You can use either the modem or printer port; it has an enhanced, fully programmable KERMIT; it supports Binary transfers.

- **Mini Macros** have wait-for prompt and copy table capabilities; the latter can be used to take data and import it to a spreadsheet.

- **Extras.** Version 2.0 can specify the Default Receive volume, supports foreign keyboards and the Edit Mouse.

VersaTerm can be used on a Skinny or Fat Mac. As if this weren't enough, Lonnie is also working on a VersaTerm Pro which will support the Tektronix 4105 for the 512K Mac.

—Barbara J. Chan

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saTerm quite suitable for the large majority of their communication needs but business users and novices should find Smartcom II or inTouch more suitable.

### Which Modem Should You Buy?

Ken Petersen recently wrote an excellent article for the Portland MUG's newsletter. He and three other members of the group conducted a thorough and highly detailed test of some major brands of modems that are available for the Mac. The test was concerned primarily with the ability of each modem to accurately receive data over noisy phone lines rather than a listing of what Ken called "bells and whistles." The idea was to cut through the advertising hype and find out which modem actually performed the best.

To test the modems, Ken and his friends introduced noise into the system by performing a loop-back call. One Mac with a standard modem was used to dial a local Sprint access number. When connected, another access number in another city was dialed. This connection was used in turn to dial a second phonenumber in Ken's home that was attached to the modem being tested. The number of errors in the information that was received on the test modem was then compared the errors that were received on a third, standard comparison modem.

The following 1200 and 2400 baud modems were tested: Apple 300/1200, Ark 24, Cermetek 1200, General DataComm 1200, Hayes 1200, Hayes 2400, Multimodem 212, Multimodem 224, Novation Smart-Cat Plus, PopCom 300/1200, Prometheus 1200, TEAM/Mercury 1200, and US Robotics Courier 2400. All of these modems are reasonably priced and generally available to most Mac users.

Of the 300/1200 baud modems, Apple's and Prometheus's ranked at the bottom. Both of these modems seemed to receive whole lines of garbage when the line was noisy. Next highest was the TEAM/Mercury, a Taiwanese imitation of the Hayes 1200. Still better and occupying the middle ground were the Hayes 1200, Popcom 300/1200, and Cermetek. Although these modems differ to some extent in terms of their features and configuration, they all performed about equally well. At the top of the scale were the Multimodem-212 and the Novation Smart-Cat Plus. Even on some of the noisiest lines, Ken reports that these modems rarely displayed errors. Because both of these modems were equally good performers, but the Multimodem 212 had many more features than Novation's product, Ken picked the former as the overall winner.

One 1200 baud only modem, the General DataComm, was tested. This modem was unique among the 1200 baud modems in that it used a different method of filtering noise from the data. All of the other 1200 baud modems employed the "fixed equalization" method in which the same set of noise filters are used all of the time while the General DataComm employed the "adaptive equalization" method in which the filters are adjusted to the characteristics of the phone-line. Although this modem actually performed more accurately than the Novation and the Multimodem 212, it received a lower rating because of its high price and almost complete lack of features.

When tested at 1200 baud, all of the 2400 baud modems performed better than all of the 1200 baud modems with the exception of the General DataComm. This is because all 2400 baud modems must use adaptive equalization to achieve acceptable levels of performance at 2400 baud and since it is already built in to the modem, the same technique is used for 1200 baud. The 2400 baud modems were indistinguishable from each other in terms of performance. They all performed flawlessly.

Ken reached several conclusions that agree with our experience. First, if you are in the market for a modem, and can afford the extra \$100-200 dollars, buy a 2400 baud modem rather than a 1200 baud one. Second, examine the features of the modems in your price range before you choose. Modems vary considerably in this regard. Several of the more important questions to ask

are: Is the modem's command set compatible with the de facto Hayes standard? Does the modem provide "call progress" information needed by software to determine whether a connection has been satisfactorily achieved? Does the modem have a built in error correcting protocol and if so, is it compatible with the protocol used by the systems that you will be communicating with? Does the modem include a memory buffer in which to hold commands? What kind of feedback does the modem supply to the user about what it is doing, e.g., LEDs? Third, price is not necessarily a good indicator of performance. It probably is more related to brand name and the number and type of features that you get. Fourth, all modems can be purchased at a discount.

Well, there you have the whole, never ending story. Sorry it took so long, but the cure for the "baud bug" is a difficult one.

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●—Ebbe B. Ebbesen and George Ryan, Jr.

Ebbe B. Ebbesen is a Contributing Editor to MACazine and George Ryan, Jr. is the Chairman of the San Diego Macintosh User Group and Sysop of their BBS, Tele-Mac.

Ken Petersen's article appeared in PMUG Mouse Tracks Vol. 1, No.9, September, 1985.



## Mac in the Newsroom

A group of newswriting and Writing/Public Relations majors at the University of Pittsburgh's Bradford campus (Pennsylvania) have launched a twice-monthly student newspaper called THE SOURCE with a Macintosh-based typesetting system. Using a 512K Mac and Imagewriter to produce drafts of the news-copy, they print out the final version on the LaserWriter.

The new typesetting system replaces an ancient IBM Composer, which was so difficult to learn that the long training time needed was not effective with a frequently-changing student staff.

The staffers initially type their stories using MacWrite. As deadline time approaches, other staff members collect the disks containing the story submissions and edit out typos and inaccuracies before merging them together using the more powerful word processor, Microsoft Word. They then print them out in the newspaper's multicolored format on an Apple LaserWriter.

Many graphics are drawn by artistic students using MacPaint or MacDraw. "These programs have changed the definition of the word 'artist,'" comments faculty advisor, Communications Professor Warren English. "The ability to use Fat Bits to fine tune the art work makes it possible for almost anyone to produce a reasonably acceptable graphics." Other graphics are selected from various clip art packages such as Click Art and Mac The Knife. They use Thunderscan to input artwork from various sources and magnify or reduce it to the newspaper's size needs.

Headlines for the tabloid-size publication are produced in-house, using Word, to produce high quality headline fonts in a variety of sizes and styles. The only vestige of the old production method is the use of border tapes for the rules which divide the columns.

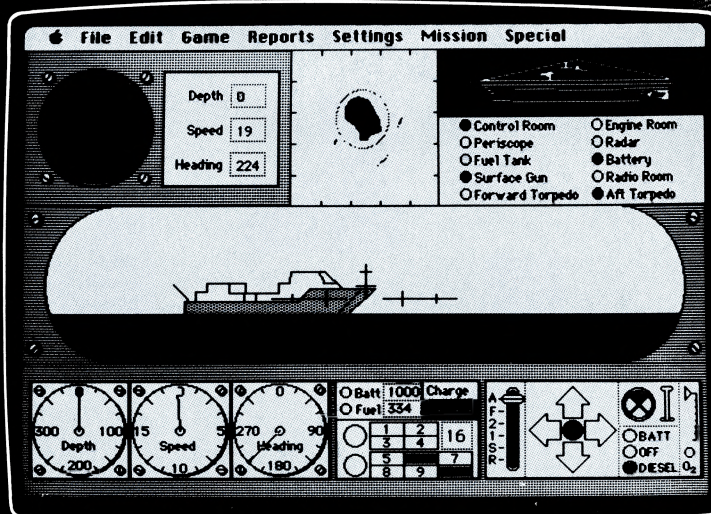
"It's a great system," vouches Editor Randy Thiel, a business administration senior. "It's every bit as good as the top-of-the-line professional typesetting systems, but at a fraction of the cost. This equipment is not only affordable, but it gives us the chance to get some real-life-hands-on experiences before we enter into the world of work."

For more information, contact Professor Warren J. English at 814-362-3380.

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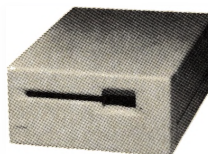
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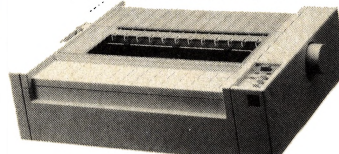
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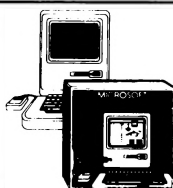
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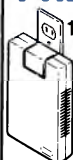
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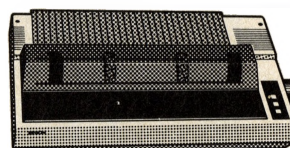
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# MacTilt

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The word ergonomics comes from the Greek *ergos* meaning work, and *nomos*, meaning natural laws, in short, the application of natural laws to the work environment. Ergonomics is directed at engineering the man-machine interface in order to reduce the incidence of physical problems. In the field of computers, this effort has been focused on improving screen visibility. Important factors include screen height, viewing angle and glare. Screen height influences posture, viewing angle the position of the head, and glare the ability of the eyes to focus properly for extended periods. All of these directly

affect comfort.

The subject of ergonomics has been often discussed in the news lately. Business and industry are becoming increasingly aware of the visual and physical discomfort which can result from operating a CRT in a poorly designed work environment. The proliferation of personal computers in the home and workplace has brought a host of minor physical ailments, almost all of which can be eliminated by adjusting CRT visibility to the operator. Elevating the computer terminal and swiveling or tilting it to match individual user preferences helps reduce eye strain, prevent headaches, eliminate muscle soreness and ease stress. A computer stand which affords the operator full control in adjusting the CRT screen for optimum personal viewing would solve the problem.

MacTilt by Ergotron, is one such pedestal. It is a well-engineered unit of durable construction and modern design which matches the Macintosh in color and texture. MacTilt raises the Macintosh approximately 4" above the desktop. A rugged friction assembly holds the Macintosh firmly in position and permits fingertip control throughout its full  $\pm 15^\circ$  tilt range and  $360^\circ$  rotation ( $180^\circ/180^\circ$ ). There are no knobs, levers, wingnuts or other adjustments for the operator to contend with.

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Assembling MacTilt was easy. Within 5 minutes I had mounted and positioned my Mac for comfortable viewing. MacTilt uses a clever bracket design which allows the Macintosh to be lifted off for quick removal. A sturdy, rear-mounted cable anchor neatly bundles the cables to prevent wear or abrasion. Optional Rip Stop Nylon custom fitted dust covers are also available in different colors.

Recent studies have indicated that a properly designed ergonomic workstation can increase productivity from 10 to 25%. I have to agree. I've been using MacTilt for several weeks now, and I can state positively that I more thoroughly enjoy my time at the computer, feel less fatigued after a long session, and accomplish more than before. I recommend MacTilt highly.

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●—C.A. Weigand

Chuck Weigand is a bioengineer on the East Coast.

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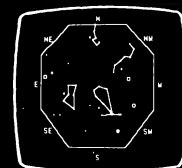
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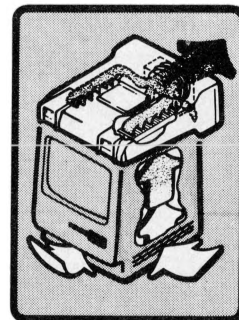
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# Grid Wars

**A**lphie's Galactic Bar and Grill is a real dive, especially when one considers the sort of aliens that hang out there. There are few gentle folk, to be sure. But you didn't enter Alphie's to listen to Mozart. There are many disreputables here willing to engage you in the less-than-gentle art of Grid Wars. The house rules seem somewhat unfair, but if you want a drink, you've got to play the game and win! Winners buy everything inside the bar a drink. Lose, and you're tossed out of the bar on your ear.

Grid Wars is a three-dimensional arcade game located inside Alphie's that you play against an alien opponent, one-on-one. The playing surface is a large black table with controls at either end. While the aliens gather round with a rather misshapen ugly sits opposing you, you grasp the controls and the game begins!

Designed by young Roy Harvey, Grid Wars is a thrilling battle of hand-and-eye coordination conducted on a three-dimensional grid. My favorite method of play was a trackball, although either a mouse or joystick is effective too.

Your alien antagonist controls Grid Nasties and Grid Walkers, physical and destructive elements that march toward your side of the board with greater and greater alacrity as your level of play increases. There are twelve columns of approach. Your job is to halt their progress by blasting these critters with your Laser Canon.

You not only have to worry about your canon's position behind your shields, but also the depth of fire. Moving the trackball to the left or right moves your canon in a like direction behind the shields at your end of the screen. To position your firing crosshairs on advancing targets, rotate the

trackball forwards or backwards. The crosshairs position themselves in a direct line from the canon, either near or far on the field of battle.

If you allow one of the Grid Nasties to contact a shield, the first protective measure dissipates immediately. Thankfully, at the lower levels of play, there is more than one shield per column. If a Grid Nastie manages to careen into your canon, you can kiss your weapon good-bye. And then there are the Grid Walkers . . . nasty little squares that manage to multiply in your direction. You can destroy them by direct hits of your Laser Canon, but in order to hit the Grid Walkers, your attention is diverted from the Grid Nasties and the situation can progress from rotten to absolutely fearful in no time at all.

You do have a couple of Torpedos and a Vaporizer, which you can activate in case

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of panic. The former will destroy all Grid Nasties in the specific column in which it is fired, while a Vaporizer totally annihilates all meanies on the board at the time of firing. However, these are limited weapons, since you only have a few of them at the start of the game. Extra numbers of these heavy-duty weapons can be earned by passing certain score points, but don't expect to garner too many of them until you've invested a lot of time learning to play the game. With 15 levels of play, it takes some time to master Grid Wars.

Grid Wars is innovative and fun. You may feel aggravated and frustrated until you learn the proper methods of leading targets and managing resources. Kudos to Ann Arbor Softworks for releasing an arcade game that takes advantage of the Macintosh's graphic and speed capabilities. And as for those alien boozers, I didn't want to buy them a drink anyway!

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# Orphan Support



December is traditionally the time when we look back over the year and try to draw some conclusions about where we have been and then speculate about where we think we are going. For those who like to reminisce, and especially for those who have not followed the Lisa from the beginning, I would like to focus on the last two years and ten months. For a synopsis of this thirty-four month period, look at the accompanying charts. They tell the story of Lisa from the beginning to very near the end. The only thing that Apple has not eliminated is the development environment of the Lisa Pascal Workshop. (By the time this is in print, Apple may have announced their development system for the Mac. I expect that very shortly after that announcement, they will drop support for the Lisa Workshop.)

For those who bought the XL as a Macintosh and have never experienced the Lisa environment, this bit of history may not be of great interest. I do not wish to criticize them for their choice nor do I wish to reproach Apple for what they have done to the Lisa. I have included this review of Lisa's history to create a context for some additional comments and observations I would like to make.

## A Salute To Greatness

As a voice of support for those who invested in Lisa and have learned that computers can be helpful without demanding a great deal of extraneous knowledge from their users, I wish to put something in print that has been a long time coming. The demise of Lisa has deprived the microcomputer industry of a computer system that has no equal among single-user systems. Regardless of the Lisa's obvious failure to gain acceptance, I wish to salute Wayne Rosing, Bruce Daniels, Larry Tessler, John Couch, and the other members of the Lisa development team. They created the most thoroughly-designed and well-balanced system that I have ever had the good fortune to use. I do not mean to say that it is a perfect system with no flaws, merely that it comes closer to being an ideal end-user system than any other

## 1983

Feb	Apple announces a revolutionary new computer, the Lisa
Mar	The Lisa is introduced to developers <ul style="list-style-type: none"> <li>- the primary market is the medium sized office</li> <li>- Lisa will dominate the high-end micros</li> </ul>
June	First shipments of Lisa take place in some quantity
Aug	Second presentation of Lisa to Developers <ul style="list-style-type: none"> <li>- there will be a "Lisa Family" of computers with a 10 year life</li> <li>- The opportunity with Lisa is IMMENSE</li> <li>- "Applications on Lisa will not be limited by the technology, but by our imaginations"</li> </ul>
Nov	The Lisa 2 series is announced <ul style="list-style-type: none"> <li>- lower prices</li> <li>- additional models available</li> </ul>
Dec	The first Apple-sponsored ToolKit class is held

## 1984

Jan	Version 2.0 of the Lisa Office System is released
Feb	The Macintosh is announced - an "insanely great" computer
Apr	Developers are informed that Apple is dropping support for the ToolKit, but will sell it as an unsupported product <p>Apple releases the Lisa Workshop Supplement for Macintosh development</p>
July	Lisa 7/7 announced (version 3.0)
Oct	MacWorks is available to developers
Oct	The "Spring Release" of the Lisa Pascal Workshop is Available (Version 3.0)

## 1985

Jan	Lisa 7/7 bug fixes released as version 3.1
Feb	The Lisa is renamed the Macintosh XL
Mar	A concept called the Macintosh Office is announced with the Macintosh XL appearing as the high end model
May	The Macintosh XL is discontinued as a product <ul style="list-style-type: none"> <li>- Apple commits to 5 years of support</li> <li>- Apple announces a Screen Modification Kit</li> <li>- Apple announces a software Migration Kit</li> </ul>
Sep	The Macintosh Office is discarded as a marketing tool
Oct	The Screen Conversion Kit is available <ul style="list-style-type: none"> <li>- changes to the Macintosh screen pixel format</li> <li>- the XL will no longer run Lisa software</li> </ul>
Nov	The Migration Kit is available from Apple <ul style="list-style-type: none"> <li>- converts from Lisa 7/7 to Lotus (Jazz) or to Microsoft (Excell, etc.)</li> </ul>



system I have seen in my 28 years of working with computers.

Obviously, much of the world disagrees with me and the many other Lisa users who believe in its underlying design philosophy. Those who know Macintosh and Lisa on a superficial level will argue that there is really very little difference between them. To these people who think that windows, pull-down menus, and a mouse are the real essence of Lisa and Mac, nothing I can say will be of use. For those who know Macintosh well and Lisa only casually, most of the things they wish their Mac would do more conveniently and with less jeopardy of data loss, the Lisa does as a natural part of its operation.

The segment of my profession which disappoints me most are those who really believe that computers should not be as easy to use as Lisa. For instance, they do not like the fact that turning off Lisa is a software function that ensures the proper state of the system before power is actually turned off. They take offense that Lisa does not have a hard-wired power switch. They believe that if a person does not have the training to turn the computer off at the right time, he or she should not be using a computer.

Then there is the crowd that thinks that Switcher and several applications are a perfectly good replacement for Lisa 7/7. While I do not wish to take away from the technical achievement of Switcher in the Mac environment, it is a kludge that is necessary because the Mac operating system is not a multi-tasking system. True, you can switch between applications a lot faster than you can in Lisa 7/7, but there is a price to be paid and the down payment is that you have to somehow make sure that the applications will co-exist without problems. While the Macintosh has a number of good features and some really innovative design concepts, the fact is that, as an end-user system, the Mac is not in the same class with Lisa; it has a different set of underlying design goals. Lisa stands alone as a hardware/software system created to help the user accomplish a task that exists apart from the computer itself.

For a short period of time a very talented and dedicated people came together at Apple to build a computer system designed to be used by ordinary people. What specific circumstances created this conjunction of technical talent is beyond my knowledge. However, it did happen and for a brief time there was an unparalleled flash of brilliance that is now a fading image.

A year ago, I was very unhappy with Apple for what I considered a tremendous blunder that not only disappointed me but cost me many thousands of dollars. I had contact with hundreds of Lisa owners (users and developers) who were hurt and

bewildered as I was. Now I have come to understand that the real accident in this bizarre series of events is that Lisa was spawned in the first place. Probably the experiment could only have happened at Apple; it is the only company I can think of that would have even considered carrying such radical innovation to the market place. With that capability also came the freedom to readily abandon Lisa in favor of whichever project bore the blessing of the person in the driver's seat at that time. The IBM PC certainly was not very innovative, but it is still there and will be for some time to come.

I have worked for over two years with my dream computer system, and I expect to have another year or two. For this I am very grateful. I wish to encourage all other Lisa owners who are plagued with thoughts of bitterness towards Apple to recognize the tremendous experiences that you have been through. How many people can say that they have ever worked on a system that they regard with the fondness you have towards your Lisa? (I have never talked to a PC user who relates to his or her system as you and I do.)

But now the end is in sight. The prospect of never being able to use the LaserWriter with 7/7 is very discouraging. New devices will be coming out, and there will be no way to create new drivers for Lisa to support them. Development of new applications is possible with the ToolKit, but all the developers have gone elsewhere. (Why stick around when the vendor walks away?)

Why doesn't someone pick up the software and support the Lisa users? While the alleged 60,000-80,000 Lisa systems out there seem like a feasible market size for some kind of venture, no one has been able to organize even a tenth of this number in order to try. A year ago, an effort of this type might have made sense (assuming that Apple had been agreeable), but now it is probably too late. Apple has successfully shifted the momentum from Lisa to the Macintosh. (In so doing, they may have shifted some of it away from Apple also, but that is another story.) With the upcoming Christmas season I do not want this to sound like a wake, for I really do not feel that way. I am content to live in two worlds, for I know that all of my really productive time will be on Lisa. I also know that several years from now I will probably have no more Lisa documents. I feel sure that the system I will be working on then will not be as good as Lisa, but it certainly will be better than either my Apple II or the PC. There is no doubt in my mind that Lisa will have been an important part of that development process.

### The Final Insult

I suppose that someone at Apple just thought it was the natural thing to say, but

I think it really shows a distinct lack of sensitivity. When you install the Migration Kit software on Lisa the message on the screen reads: The Macintosh XL Is Installing The Migration Kit Software. The irony of this message coming out of a program running under the Lisa operating system is almost too much to bear. I will not demand an apology from Apple, but I do hope that someone is just a little embarrassed.

### Curing Some Troubles With Mac Works

For those of you who are having troubles with MacWorks on a hard disk, try the following steps:

- (1) Save all your Mac documents on diskette
- (2) If it is a shared disk, save all your Lisa documents on diskette
- (3) Reformat the disk with the Lisa 1 diskette, version 3.1.
- (4) Reformat the disk with the Hard Disk Install for Macintosh (either all or part of the disk)
- (5) Copy all of the documents from diskette back onto the disk

For reasons I have not been able to understand, there is something that happens in the Lisa disk formatting process that can affect the operation of MacWorks, even after the disk has been re-formatted with Macintosh. The main source to this problem is that most people may not have reformatted their disk with the Lisa 3.1 version, since it was not a necessary step when updating to 3.1. I could not get MacWorks to boot directly from the hard disk even though the entire disk was devoted to Macintosh. As soon as I followed the above procedure, it booted as it should. (However, it still screws up my Lisa preferences and I have not found out if there is a fix for that problem.)

### Lisa People Have Feelings Too

Don't forget your favorite Lisa person over the holidays. LisaVision and the Bit-Fixer cost less than \$100, and without the manual either will fit in a stocking. For the more economy-minded, the Accessory Pak 1 from Silicon Beach Software is a neat XL utility at \$39.95.

—Dave Redhed

Dave Redhed is a Contributing Editor. Send comments to him via CompuServe 70167,613.

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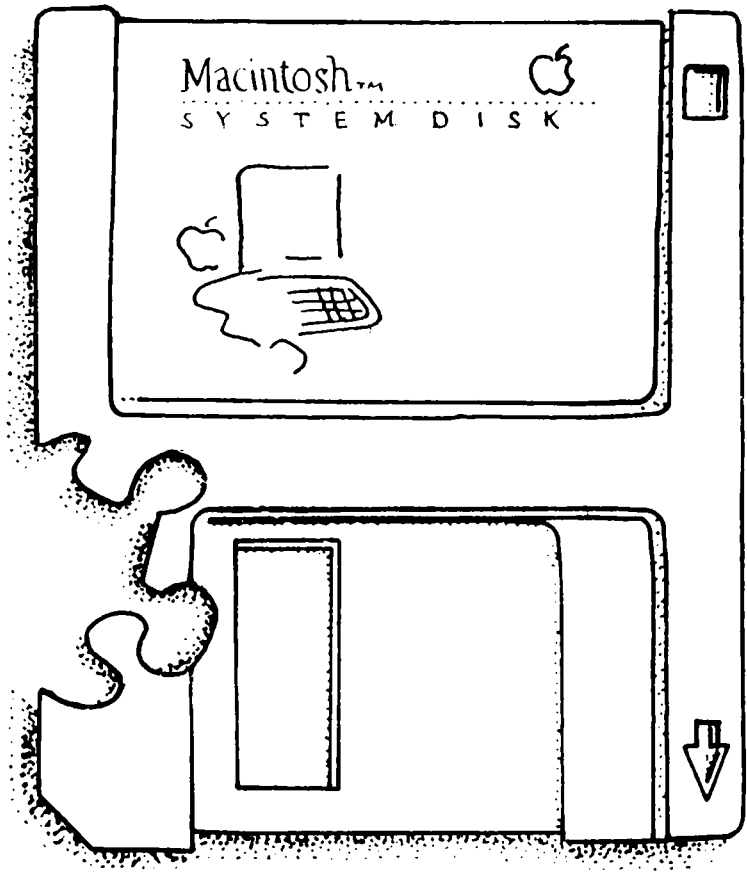
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# Tops In Entertainment

**F**or most of the last year, Apple has put its marketing muscle behind getting the Macintosh into American business offices. But as many people have learned to their delight, this versatile machine can play just as hard as it works.

The entertainment software library which supports the Macintosh is not yet large, but it makes up in quality what it lacks in quantity. The huge memory capacity, high graphic resolution and flexible interface of the Macintosh have inspired some of the best games and entertainment ever seen on a home computer screen.

Leisure programs fall into two basic categories: new designs and translations from other computer systems. This is frequently a significant distinction. Original software can more fully reflect the tremendous power of the Macintosh, because the authors are not fettered by the need to imitate something created for a more limited computer system. Translations aren't necessarily worse than originals per se, but they are often much less Mac-like.

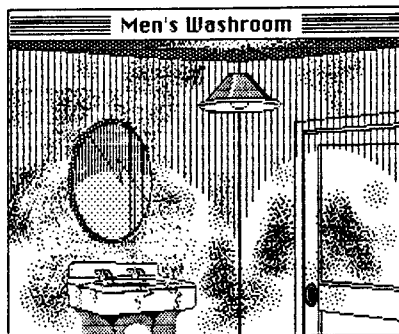
One thing this survey of the best entertainment software will not attempt to do is rank the titles within each of the two overall classifications. This is a very diverse group of programs, and it wouldn't do any of them justice to match an adventure game against a flight simulator. That said, let's go to the lists.

## Original Programs

**Airborne!** (Silicon Beach Software). Action contests are pretty scarce for the Macintosh, possibly because the mouse isn't very good for precisely manipulating on-screen objects in real time. This design succeeds as an action game, because it emphasizes timing and accuracy rather than blindingly fast movement. In *Airborne*, the player commands an anti-aircraft battery and a mortar which must be used to repel a paradrop and the ensuing overland attack. Good graphics and outstanding sound dress up this relatively simple arcade-style program.

**Balance of Power** (Mindscape). When frustration over U.S. or Russian foreign policy becomes unbearable, try this solitaire simulation of global politics. As head of one of the superpowers, the player must buttress allies, sway neutrals and bully hostile countries in an effort to extend its sphere of influence as far as possible. But when opposing interests collide, it takes nerves of steel to face down the computer-controlled opponent in a nuclear confrontation. Window technology makes it surprisingly easy to manipulate data for about 40 countries in this educational, as well as highly enjoyable, simulation.

**Deja Vu** (Mindscape). This illustrated detective adventure saddles the hero with a double dose of trouble that would slow down even Phillip Marlowe or Lew Archer. In this icon-driven game, the player is a Chandler-esque gumshoe who must solve a murder and recover his own memory before the police toss him into the slammer and melt down the key. One especially good feature is that the adventurer can simply click on items visible in the picture to examine and manipulate them instead of typing in lengthy command sentences.



**Enchanted Scepters** (Silicon Beach Software). Digitally recorded sound greatly enhances an already solid illustrated fantasy adventure. When you swing a sword in this game, you really hear the mighty blade whistle through the air. The illustra-

tions are exceptionally good, too, and they fill the screen quickly enough to prevent the gamer from getting inadvertant clues to hidden dangers and treasures. Elron the wizard could save the kingdom of Callion from an invasion by the fierce Hurks if he could recover the four mystic scepters lost during the great war. As his apprentice, you must search this danger-filled land to find the precious artifacts and bring them back to your master in time to save the day. The player selects frequently used commands from menus, which speeds up the exploration of this often-deadly realm.

**Fokker Triplane Flight Simulator** (PBI Software). One of the most respected aircraft of World War I was Germany's Fokker DR3 Triplane. This intricately detailed simulation puts the Macintosh owner at the throttle of one of these speedy and maneuverable planes in a variety of exciting missions. The Macpilot uses the mouse to move the stick and hits individual keystrokes to work the rudders, change air-speed and fire the guns during combat. Although Fokker Triplane is far from simple, the well-written manual and special start-up help card get the compu-aviator into the sky very quickly. And with a little practice, players will soon be capable of performing dives, rolls and other aerobatics which would delight the Red Baron himself.

**Gato** (Spectrum HoloByte). Three-dimensional object perspective breathes excitement into this real-time simulation of submarine combat during World War II. As captain of a Gato-class attack sub, the solitaire gamer makes all the strategic and tactical decisions, from laying a course to sinking an enemy vessel, which would confront a real skipper. Computer-controlled officers and crewmembers provide radar reports and other status information which the captain needs to guide his craft through a successful raid. The Macintosh edition also offers commanders the opportunity to create wholly new assignments when they master the ones provided on the disk.

**Mac-Challenger** (Aegis Software). Landing the special shuttle is the goal of this demanding flight simulator. The object is to take the craft from the upper atmosphere to a safe touch-down at Edwards Airforce Base or the Kennedy Space Center. The shuttle is essentially a glider, but don't expect to sail blissfully to the ground. The ship has the aerodynamics of a flying brick, so the player needs to master the authentic controls and closely watch the data screens. Options which allow the gamer to vary the wind and visibility conditions make bringing the bird to earth even more difficult.

**Make Millions** (Scarborough). A cryptic message summons the compu-financier to Wiki-Wiki Island, where he or she must parlay shrewd investments and savvy

management into control of a five-company conglomerate. The main display shows a well-equipped office, complete with a working Macintosh on the desk, which becomes the nerve center for all the wheeling and dealing. The gamer employs the mouse to activate the various office features. This including a door which leads to the industrial park occupied by the five Aloha companies which are the target for both the player and the computer-directed Humungous Ltd. Once the computerist gains a major interest in one of the individual firms, its operations can be fine-tuned to generate more capital for further investment. Role-playing elements enliven this detailed financial simulation and make it involving as well as mentally stimulating.

**Perplexx** (Hayden Software). This cross-word strategy contest for one to four unabashedly compares itself to Scrabble. It might be better described as a customizing kit for Scrabble fans. Perplexx allows the user to design the board, determine the number and location of bonus squares, choose letter frequencies and availability and much, much more. And when there aren't enough human players around to make a game, Lexx provides plenty of competition. A 90,000-word dictionary backs this robot player's shrewd moves.

**Strategic Conquest** (PBI Software). The military struggle for the control of an entire world is the central theme of this excellent solitaire wargame. The armchair general begins by exploring the countryside, but soon collides with the expanding sphere of the computer-directed enemy. The program blends the strategic and tactical aspects of combat very effectively. The player must occupy cities and use their productive capacity to create the army, navy and air force units with which to drive the foe from the field of battle. A big advantage over non-electronic military simulations is that every game of Strategic Conquest is different, because the program generates a new world at the start of play.

## Translations

**Championship Boxing** (Sierra). An excellent program conceived for the IBM has become an absolute classic sports simulation for the Macintosh. Two modes, strategy and arcade, let one or two players manage or climb through the ropes to trade punches. Statistical replay fans will also appreciate the bank of past and present champions which facilitates replays of classic bouts as well as "what if?" dream matches like Joe Louis versus Larry Holmes. The artwork and animation build the perfect ambience for pugilistic action. The views of the gym and the ringside crowd would do credit to movies like "Body and Soul."

**Championship Starleague Baseball** (Gamestar). The most popular home computer action baseball game has never looked better than in its Macintosh edition. One or two managers can pitch, hit, run and field using a combination of keyboard and mouse order-entry. Artificial intelligence makes the on-screen athletes more than humanoid cursors. A manager can start a fastball pitcher or one who relies on tricky curves, and decides whether each batter in the order will swing for the fences or try to pound out line-drive hits. And when the starting hurler falters in the late innings, the team can summon a knuckleballing reliever to protect the lead.

**Hacker** (Activision). This role-playing puzzle adventure casts the computerist as—a computerist. An accident logs the player onto a secret network, where he or she eavesdrops on the plans of Magma, Ltd. The multi-national company is planning an experiment which could destroy the entire planet, and it's up to the gamer to gather evidence to alert the authorities. Unfortunately, pieces of the needed document are in the possession of spies located all over the world. The player uses a robot probe to visit each agent and try to buy or trade for pieces of the report. The hitch is that each spy accepts only certain forms of payment. Through trial and error, the player must develop a trading strategy which collects all the pieces and then take the document to Washington, D.C.

**Mindshadow** (Activision). No adventure game translation makes better use of the special features of the Macintosh than this challenging excursion into the unknown. The gamer can avoid a lot of the typing associated with traditional illustrated adventures by using the system of on-screen menus to move, handle items, and perform other frequent actions. The player wakes up on a deserted beach without even a shred of memory. To win, the player must find a way off the island and piece together both his true identity and the reason why someone marooned him like Robinson Crusoe. This quest involves the character in a succession of picturesque encounters all over the world before the fog of forgetfulness finally lifts.

**Murder by the Dozen** (CBS Software). Crime is running rampant in the usually peaceful town of Micropolis, and it's up to one-to-four amateur detectives to solve the 12 challenging murder cases. The sleuths pick options from well-designed menus as they move from location to location to interview witnesses and search for the evidence which can catch a killer. Gamers compete against each other and the clock to fit the pieces together and announce a correct solution. Once a case is successfully completed, the program gives each participant a rating based on the thoroughness of the investigation and elapsed time.

**Pinball Construction Set** (Electronic Arts). A classic Apple recreation proves every bit as entertaining on the Macintosh. Anyone can create customized electronic pinball tables which have all the play-features found on the real thing. No programming skill is needed to use the parts box and other mouse-operated options. Five sample designs included on the disk point the way for neophytes and are a lot of fun to play in their own right.

**Sargon III** (Hayden Software). The Rolls Royce of computer chess programs is no less regal in its Macintosh incarnation. Designers Dan and Kathe Spracklen provide a powerful program which can give everyone from pawn-pusher to expert a competitive game. But Sargon III is more than simply an electronic chessboard. Its mammoth roster of options makes it ideal for chessists who want to study the game in depth. Simple commands let the user switch sides, take back moves, set up problems, re-play classic matches, get hints, review games in progress and more.

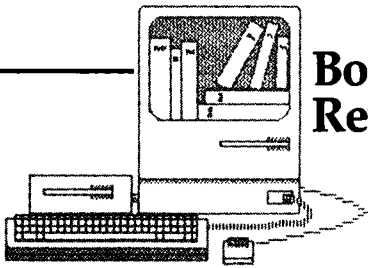
**Ultima III** (Origin Software). Brilliant programming makes this the best of all the editions of Lord British's best-selling fantasy adventure. It preserves the vast scope and varied action of the Apple II disk, but scraps the out-moded command control system which hobbled it. Now players select options from windowed menus to move, trade and fight instead of having to memorize several dozen keystroke codes. The adventure itself is exceptional; its numerous dungeons and treacherous countryside will keep players enthralled for a dozen or more play-sessions.

**Wizardry** (Sir-Tech). This first-person perspective role-playing program is about as close as computer adventuring comes to "Dungeons & Dragons." The user assembles a party of characters, each of whom is endowed with a unique set of abilities and weaknesses, to explore the multi-level labyrinth and bring the renegade sorcerer Werdna to justice.

**Word Challenge II** (Hayden Software). "Boggle" is the clear inspiration for this computerized word-search contest. Gamers race against each other to discover words embedded in a grid of letters before time runs out for the round. The program allows participants to adjust the size of the grid and the scoring system. Perhaps the best thing about Word Challenge II is that it provides a skillful computerized opponent, Lexx, for those occasions when you can find words, but not a human adversary.

Are these the only good leisure-time titles for the Macintosh? Certainly not. But these 20 programs do offer persuasive evidence that the Mac is a magnificent entertainment system as well as a productive work-tool.





## Book Review

**H**ere are two holiday offerings for business users and would-be artists. One is an overview for Macintosh users planning to use their computers in a work environment, and the other is a book and disk combination to inspire people to dabble in the graphics arena.

*Mac at Work* is a how-to guide for those of us who work in a business environment, and would like to use a Macintosh to make the work flow more efficiently. It is for the person who already has access to a Macintosh, but doesn't know that much about using it in his or her office.

The book begins with a brief introduction that gives an overview of the book, as well as a description of the hardware and software necessary to use all the techniques described, and a very short introduction to the Macintosh.

Part One contains eight chapters that tell us how to use the Macintosh to perform basic business functions: Charts, Projects, Diagrams, Financials, Text, Forms, Lists and Telecommunications. It is similar in format and scope to *Mac and the College Student*, reviewed in the September issue. In each chapter, the authors illustrate basic business tasks using a selection of the most popular software available for the Macintosh (all of them, however, are published by either Apple or Microsoft). The reader will learn how to create a variety of business documents: invoices, organizational charts, project planners, spreadsheets, business proposals, etc.

Part Two shows you how to put together everything you've learned in presentation form. The authors describe how to combine text and graphics into one document that can be printed on either the ImageWriter or LaserWriter, or transmitted by modem to a typesetter.

The book is well written and well organized, with many illustrations (of the screen dump variety) that make understanding the material easy. The book should be used next to the Macintosh, so the ideas can be tried out while they are still fresh. A nice feature is that to use the book, you don't have to read it in any order. If you are interested in telecommunications this week, you can jump right away to the chapter on telecommunications without having read previous chapters.

In deciding whether or not to purchase this book, you should be aware that it is basically an overview, with little detail about the nitty-gritty details of office work.

For example, in the chapter on Text, you hear about Microsoft Word and MacWrite, but almost nothing on how to choose between them. And you never once hear that something called a spelling checker will help you spot typos and misspellings. And those novices who plan to use Microsoft Word and the ImageWriter to produce the presentation quality work described should have been warned in advance that it could take over half an hour to print a 15-page proposal in the high quality mode. This could be a real waste of your time or your secretary's time—not to mention all that time the computer is off limits (We haven't heard about print buffers either!).

If you are a businessperson who has been using the Macintosh for at least a few months, you will probably have a good idea already of how your computer can help in your business (that's why you bought it, right?). As an experienced user, you will find that the book does not delve deeply enough into the things you need to know. For example, you may know that you need database software, and you most likely know what a database package does, and how it can help you. What you have probably been stuck on is which package to buy, and this book won't be of much help.

In short, if you work in an office setting, and haven't done much exploring in the world of business applications for the Macintosh, this book is for you. It will give you a glimpse of the productivity and creativity that can be yours for the cost of a Macintosh and the right software. If you are an experienced user looking for tips on how to integrate the Macintosh into your office, this book is too elementary to be of much help.

*Mac at Work: Macintosh Windows on Business*

by S. Venit and Diane Burns

Wiley Press, John Wiley & Sons, New York

228 pages, \$17.95

*The Mac Art Department* is more than a book. It is actually a manual which accompanies a disk of clip-art graphics. The software and manual were designed to be used right next to a Macintosh. The author strongly recommends getting an external disk drive to minimize disk swapping.

For those uninitiated in the world of commercial graphic art, clip art products are copyright-free drawings found in books which artists clip out and paste in their own layouts. If they need a drawing of a tree and don't have the time to draw it themselves, they might just use a generic tree someone else has already drawn.

Tom Christopher is a professional designer and computer graphic artist, and

his book was created for people with little or no background in art. There are over 150 graphic images included on the disk that can be used or modified by the user to suit his or her own purposes. The author takes the user through some basic and advanced MacPaint techniques such as duplicating images, moving them around, filling them with patterns, changing their sizes, etc. The manual gives fairly easy-to-follow instructions that will enable even the least talented among us to create interesting and powerful graphics that can be used for stationery, invitations, advertising, announcements, etc.

The Appendix of the book contains the drawings that are on the disk. Categories include America (Uncle Sam, Statue of Liberty, etc.), Animals, Borders, Buildings, Desk (computer, telephone, etc.), Food, Hands and Signs, Household, Insects, Music, Objects, Personal, Plants, Seasonal, Sports, Tools, and Travel.

I experimented with the clip art (sometimes called click art by Macintosh enthusiasts) and found it enjoyable and easy. The procedure for transferring one of Christopher's images to the user's work disk is a fairly simple one if you have an external drive. My first experience, however, produced a problem I didn't know how to resolve. The image I chose to copy onto my work disk was a jack-in-the-box. The instructions were to lasso (or marquee) the image, copy it, then paste it in a MacPaint document. Unfortunately, the jack-in-the-box was larger than the active window (the active window in MacPaint is only one-third of the page) and there was no way to lasso and copy the image without losing part of it.

Another experiment was trying to make a full-page border from the border corners supplied on the disk. You're supposed to keep copying and rotating a corner piece to make the other three corners, then stretch the edge to make the four connecting edges. I found it virtually impossible to align all the parts correctly; my connections were hardly seamless.

If you haven't yet tried clip art, this book might be a fun introduction. It is easy to follow. If you have already worked with clip art, and are more familiar with graphic design, I suggest looking at the pictures first to decide if you can use them.

*The Mac Art Department*

by Tom Christopher

Simon & Schuster, New York

96 pages plus disk, \$39.95

● —Cheryl D. Sandler



# Urban Warrior

By Duane Later

**Hey Kids! Join Duane Later's  
Sad Midgets Dance Club**

**Name** \_\_\_\_\_

**Address** \_\_\_\_\_

**City** \_\_\_\_\_

**State** \_\_\_\_\_ **Zip** \_\_\_\_\_

**High Powered Games requests  
permission to use nuclear weapons**

**Granted** ☐ **Denied** ☐

**DON'T TOUCH A PARROT'S TAIL**

17-13-2-26-2-13-16-15-8-24

10-21-9-21-9-6-19-22-20-6-5-16

15-21-7-10-8-9-21-21-9-6

10-15-6-23-10-21-2-3-13-6

**FOLD BACK FOIL TO UNCOVER CHICKEN AND BROWNIE**

## Messages from Duane Later...

To Reagan: Even the wild boar runs from the tiger

To Madonna: eidfkj weh19 qwnd cufkg iu 1mc ojhb

To Charles Manson: I want a girl's bike for Christmas

To Col. Quadaly: How do you feel about the Hoover Dam?

To Bertil Ohlin: Watch out for red ants and black ants

To Mikhail Gorbachev: Honey-roasted peanuts are a delicious treat

To mother & father: Let the dog go free

**Contest: Write an essay titled "What Mass Transit Means to Me"  
and submit it to High Powered Games**

**Urban Warrior is an interactive novel for the 512K Macintosh \$60.00**



**High Powered Games  
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Phoenix, AZ 85016  
(602) 279-7449**



# In Our Opinion

## A User's Guide to the Best of '85

**O**pinion is a construction of personal experience that may be vocalized or written for a variety of reasons, the foremost being to advise. Without the ever-diversified, sometimes annoying, often-entertaining and more-often-than-not, thoughtful opinion of such journalistic computerphiles as Charlie Jackson, Doug Clapp, and John Dvorak, computer publishing would be relegated to a mundane environment of technicalities devoid of personality and verve. Opinion reinforces a basic American freedom—everyone can have one!

Our opinion of 1985's best hardware and productivity software for the Macintosh has been tempered by discussions with numerous computer industry leaders and end-users as well as personal use of most Macintosh products in our daily work. These choices were difficult to make as most Mac products offer meritorious utility and performance. To list a product as Best of the Year connotes something extra special, something as unique and revolutionary as the Macintosh itself. These products prove the viability of the system and the wealth of vendor support for the Macintosh. Businesses should look beyond their Big Blue Blinders and note that these products offer a real alternative to "business as usual."

With the Macintosh you can manage and shape ideas with the friendliest man-to-computer interface yet marketed. The products listed below exploit the Macintosh's capabilities and offer unparalleled performance and ease-of-use. Here are our favorite Macintosh products of 1985:

### Hardware

#### ✓ Imagewriter II, Apple Computer, Cupertino, CA

Apple has released a more-than-satisfactory second generation replacement for their workhorse printer, the ImageWriter II. The new printer offers near-letter-quality and high-quality graphics output in three printing modes. The optional Apple SheetFeeder attaches to the top of the ImageWriter II and automatically loads up to 100 sheets. The printer pumps

at 250 characters-per-second, twice as fast as the original printer. Push button loading for single sheets, optional color ribbons, new printer design, optional 32K print buffer, built-in character sets, and AppleTalk networking of the printer all combine to create more productivity for businesses.

#### ✓ Keeper, Micro-Design, Austin, TX

This is a file server that's smarter'n you think. AppleTalk has desperately needed a product like this. The Keeper manages as many as 31 networked Fat Macs or XLs. Much more than a disk server, the Keeper negates the worry of two or more persons trying to write to the same file at the same time. With its own computer processor, the Keeper doesn't need a separate Mac for supervision. It can manage as many as 2,000 files per disk drive. And the desktop can have as many as 32 active disk volumes at once. The same file and disk volume may be accessed by many users simultaneously without the need of special software. Passwords for your top-secret files can be assigned to each unit on the network and to individual disk volumes as well. Keeper serves as a print spooler for both the AppleTalk network and the Imagewriter. And data zips at 900 kilobits-per-second, not the usual 230 kbs of the AppleTalk network. Do you have a single Mac but want to be ready for future network expansion? Keeper has a special cable that allows it to be used as a hard disk drive by a solo Macintosh. This is a dynamic product, a true business necessity!

#### ✓ LaserWriter, Apple Computer, Cupertino, CA

This printer revolutionized publishing; printing at 300 dots-per-inch, the LaserWriter gives professionals the ability to manage many publication needs. With near-typeset-quality output, ease-of-use, variable fonts, PostScript comprehension (the industry language standard for page descriptions), this printer manages text and graphics with amazing professional output. With plug-in boards that enable the PC and compatibles to link with Ap-

pleTalk, IBM PC users can directly access the LaserWriter, which can emulate the Diablo 630 protocol. A direct and simple RS232 connection to the printer's serial port and a turn of the LaserWriter's mode switch to its Special selection is all that's required. We use the LaserWriter to print our multi-page computing newsletter for a high quality, cost-effective alternative to traditional typesetting and printing methods.

#### ✓ MacCharlie, Dayna Communications, Salt Lake City, UT

MacCharlie is something special! This easy-to-attach co-computer allows the Macintosh to manipulate IBM PC productivity software. Not only can you easily transfer files from one operating system to another, both environments can access the LaserWriter or ImageWriter printers for everything from screen dumps and file printing to text/graphics enhancements. This marvelous product now enables those in corporate environment to enjoy the Mac's graphic and user-interface innovations and still continue to work with their DOS files—on the Macintosh computer instead of the PC. MacCharlie is our choice as THE Macintosh Product of the Year, because the combined hardware and software offer simple and expeditious bridges to the gap between the Big Blue and Apple environments. For additional information, read the November issue of MACazine for an in-depth review of MacCharlie.

#### ✓ Thunderscan, Thunderware, Inc., Orinda, CA

How do you make a great product even better? Through enhancement of already formidable capabilities. Thunderware's latest upgrade to its Thunderscan video digitizer offers a price/performance ratio that should tempt every Mac owner into immediate ownership. These enhancements include support for the LaserWriter, AppleTalk and the 15" Imagewriter. The latter requires the rebuilding of the Thunderscan unit itself, but the \$45 charge provides for both a new 90-day warranty and a wide carriage printer cover. The docu-



mentation has been vastly improved and includes a tutorial on how resolution plays its role in digitizing a video image. The new software works with Switcher, which means you can digitize in the background while working on something else, an enormous time saver. A Gray Map Filter has also been included, allowing for advanced image manipulation. The gray map itself can be saved as an ASCII file. Think of the day when a page composition program can simply load such a file to produce its included image in a newsletter or sales brochure! And best of all, there's no increase in the retail price of ThunderScan. As Andy Hertzfeld, the writer of the ThunderScan software, stated when discussing the product, "We were doing something for the first time. Making an important tool. We think we did a good job." We think you did a fantastic job!

### Software Accounting

✓ **Rags To Riches**, Chang Labs, San Jose, CA

This program gives a dazzling performance on the Macintosh. The Rags To Riches series includes General Ledger, Receivables and Payables, all integrated modules that can handle up to 5,000 accounts and 10,000 transactions. Perfect for small-to-medium sized businesses, no other Macintosh accounting program provides such flawless interaction with the Mac's user-interface capabilities. The day's book-keeping work is automatically and instantly saved to disk. Summaries are available at the click of the mouse and a built-in calculator can help you with such matters as discounts and multiple sales. The documentation is extremely well-written, and AppleTalk and the LaserWriter are supported. Chang Labs provides a toll-free telephone number for potential customers with on-the-spot questions about Rags To Riches. We wouldn't entrust our accounting needs to any other accounting program currently available for the Macintosh.

### Communications

✓ **Smartcom II**, Hayes Microcomputer Products, Norcross, GA

Communications is critical in any operational environment, one where program error cannot often be tolerated. A program that offers ease-of-use with power could be an instant best-seller. SmartCom II offers both and supports not only Hayes communication protocols but also XModem and MacBinary. It includes a command language and a screen buffer that can be archived to disk or printer. If two Fat Macs are connected via SmartCom II, two users can enjoy real-time graphics. As the data is ported from one machine to the other, what one draws on the screen is seen by the other. This certainly prevents one from becoming 'baud' while awaiting



MacCharlie

File Edit Enter Show Action

to Rags to Riches Ledger - for America's Small Businesses. Ledger is the late

**SUMMARY**

☒ Current ☐ Quarterly ☐ Yearly

☒ Assets ☐ Liability ☐ NetWorth ☐ Income ☐ Expense

Key	Name	Amount	PCT
k	Checking Account	\$23,876.07	24.4%
	Petty Cash	\$98.60	0.1%
Account M	Accounts Receivable	\$4,145.00	4.2%
Class:	Inventory	\$50,810.57	52.0%
	Other Assets	\$3,688.31	3.8%
<input checked="" type="radio"/> Assets	Furniture and Fixtures	\$8,226.01	8.4%

Subclass

Current:

Quarter-to-date:

Year-to-date:

Pulldown Action menu to Post/Search

Rags to Riches Ledger



the end-of-transmission. The use of iconology is superior! Read Ebbe Ebbeson's article dealing with communications in this issue.

### Database Management

- ✓ **FileMaker**, Forethought, Inc., Mountain View, CA

FileMaker is one of the few software offerings that anyone can effectively use as a database management system. This disk-based program fully supports the LaserWriter. You design your own reports and can include pictures created with any of the Mac's graphics programs. Indexing is automatic for every word, number and date in every field. However, the highest compliment for FileMaker is that these capabilities do not require you to become a programming expert; FileMaker is extremely easy to use. This product received InfoWorld's highest review rating, with which we heartily concur. Read Jürgen Weber's review in the November issue of MACazine.

### Database Management PLUS

- ✓ **OverVUE Version 2.0**, ProVUE Development Corp., Huntington Beach, CA

This is our personal favorite, a database management program for power-users. Because it is RAM-based, OverVue 2.0 sorts instantaneously. The program utilizes macros, user-defined programs that initiate OverVUE 2.0 commands. You can also merge and append files, import data from other databases, and utilize clairvoyance when entered information is checked through existing entries in that particular field. The program then guesses what your entry will be. You can either accept the displayed entry or continue inputting the preferred data. Other advantages include input patterns for any data field and business charts that range from pie and area charts to line, column and bar charts. OverVue 2.0 is extremely powerful and deserves recognition as a business-oriented database management system. We give OverVUE 2.0 our PWP award—Power Without Perplexity. See Steven Schwartz's review of OverVUE 2.0 in the October issue of MACazine.

### Desktop Accessory

- ✓ **Click-On Worksheet**, T/Maker Graphics, Mountain View, CA

With integrated business graphics and a worksheet size of 20 columns by 50 rows, plus worksheet templates, Click-On Worksheet is instantly available. Simply access the Apple menu and run the spreadsheet on top of any current application. We use it for "what-if" analysis, when running a larger spreadsheet program, to localize a smaller portion of the larger spreadsheet without leaving the other program's current cell selections. Calculations can be cut

### Global Communication

**T**he Macintosh must communicate with IBM computers and their clones to become even more successful. To accomplish such a critical interface, many companies are currently testing and/or releasing programs that marry the AppleTalk Personal Network to IBM PC networking systems. These major advances in the networking environment allow you to merge the data-manipulative abilities of the IBM PC with the graphic and user-interface features of the Macintosh:

- ✓ **EtherMac**, 3Com Corporation, Mountain View, CA

3Com has long been recognized as a leader in the IBM PC environment for its local area networking product, EtherSeries. Now the 3Com 3Server can act as a server for AppleTalk and associated printers while managing the company's Ethernet system. EtherMac is the software that enables 3Server to work with the Mac and the LaserWriter.

- ✓ **PC MacBridge**, Tangent Technologies, Norcross, GA

This is a plug-in card which allows the PC to access the AppleTalk Personal Network. A PC user can enhance text files with graphics and different font styles and sizes, and then print on the Apple LaserWriter. New software will enable the PC to transfer files to the Macintosh.

- ✓ **TOPS**, Centram Systems West, Berkeley, CA

Another answer to the PC to Mac file transfer question is the Transcendental Operating System (TOPS). Macs can communicate directly with the IBM PC, with all drives acting as though they were each directly attached to the user's computer. The software runs in the AppleTalk environment, which means other systems require the TOPS interface card to join the network. Jerry Daniels in his October On The Road column stated, "... network expansion can be done in a modular manner with nary a care as to whether the hardware is compatible." This is one network any system can climb aboard.

☉—Hartley and Patricia Lesser

### Gazing Through the Crystal Ball

**W**e predict that the following software will be very successful in the personal and professional arenas, for they will allow the business professional to relax with Mac and enjoy a well-earned respite from the heavy pressures of spreadsheet iterations and project deadlines. They offer the finest in programming technology, graphics and adventure:

- **Balance Of Power** (Mindscape)—thought-provoking and educational search for world peace—simulation
- **GATO** (Spectrum Holobyte)—WWII, Pacific theatre, submarine warfare—simulation
- **Hacker** (Activision)—security breach inside a top secret computer system; you've got to get in and there's no documentation!

- **MacWizardry** (Sir-Tech Software)—THE classic fantasy role playing game, re-designed for the Mac

- **Pinball Construction Set** (Electronic Arts)—computer aided creation of pinball machine games

- **Spellbreaker** (Infocom)—the third and final chapter of the Enchanter text-adventure series

- **Ultima IV** (Origin Systems)—on-screen characters search for the meaning of the Avatar—another Mac redesign of a classic!

Nineteen eighty-six will be a year of exciting software introductions and amazing peripheral additions. The Macintosh has definitely changed the way we compute, by allowing people to be more important than the machine. Happy New Year, Mac!

☉—Hartley and Patricia Lesser



and pasted into whatever major application is currently running. Hassle-free and accurate, Click-On Worksheet is one desktop accessory that should be available in every professional's Apple menu. See the in-depth review of this program in the October issue of MACazine.

### Desktop Publishing

#### ✓ PageMaker, Aldus Systems, Seattle, WA

This is the true professional when it comes to desktop publishing programs. PageMaker is extremely easy to learn and affords you with the highest-quality text and graphic composition available. Multi-page viewing, direct access to word processed files, graphics cropping, maintenance of column relationships, font variety, and LaserWriter support ensure a professional end product. We use PageMaker to create and produce our 10-page computing newsletter and for publication design and instantaneous article layout. We've also used it to produce a marketing newsletter, to design business cards, advertising layouts and PR campaigns. We can't speak highly enough of this program's capabilities.

### Graphics & Animation

#### ✓ MacDraft, Innovative Data Design, Inc., Concord, CA

With 16 different scales, automatic dimension lines, and the ability to manage four different documents on the screen simultaneously, MacDraft wins the drawing tool award for 1985. This object-oriented design tool is extremely easy-to-use and is perfect for both the novice and professional designer for artist, architect or engineer. You can zoom in and out on a drawing and still access all of the program's capabilities. The rotational capabilities . . . as little as a one degree increment . . . allow for flexibility other programs can't touch. You can add dimension lines automatically to your drawing and have 16 different feet and inch scales and 12 metric scales from which to select. If you select a scale after completing the drawing, the graphic will automatically convert to the new scale. MacPaint bit maps can be pasted in as well. An awesome display of programming skills with unlimited potential. Look for a review in the next issue of MACazine.

#### ✓ Mac the Knife—Volume 2—Fonts, Miles Computing, Inc., Van Nuys, CA

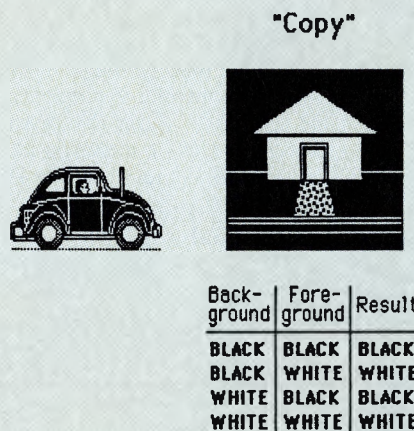
Here are superior fonts that will please any professional word processor. There are 24 new fonts on this disk, all easily transferred to your application via the font mover. Check out the Paris and Stuttgart fonts for breath-taking printing. Look at the script Florence font, and if you need of the Japanese katakana set, use the Kawasaki font. Some MacPaint tips are included in the documentation.

#### ✓ VideoWorks, Hayden Software, Lowell, MA

The only word to describe this program is stunning! From the creation of animation to a musical score, VideoWorks does it all in an easy-to-understand manner that will absorb your attention for many hours. The program includes original artwork that you can include in your animation. This is the perfect program for professional storyboard artists, producers, educators, cartoonists and the casual hobbyist, from child to adult. Included is a marvelous utility program called Art Grabber that transfers MacPaint images in one step! Be sure to read the VideoWorks review in the October issue of MACazine.

bilities that include multi-layered outlines, inclusion of graphics, table of contents and a simple word processor. The best description of the program is that all writing is intuitive; you don't need a formal approach to manage your thoughts. Simply by writing what you think, and then categorizing your thoughts after they've occurred, you will have a hierarchical outline. The program's power comes into play when you have to reorganize what you have written. This is the perfect program for those who have a lot to say, numerous ideas of how to say it, but need to cut and paste their words into an organized format before actually writing the final product. See the August issue of MACazine.

### Examples of VideoWorks™ "Efx" modes.



### Time Management

#### ✓ Micro Planner, Micro Planning Software USA, San Francisco, CA

What MacDraft is to MacDraw, Micro Planner is to MacProject. Micro Planner is a superior tool for project management. It can model separate and parallel events and activities, including "floating" activities. It can perform two types of analysis, time and resource, the latter by quantity and time. With Micro Planner you can generate various reports, including bar charts and listings. And it automatically draws the project model for you. Micro Planning Software offers full service; project management consulting and workshops are available, as is customized programming for multi-user applications and mainframe use. Micro Planner is a true productivity tool for anyone who needs to manage projects from concept to completion.

### Thought Processor

#### ✓ ThinkTank 512, Living Videotext, Inc., Mountain View, CA

How does one categorize a product that had never existed before? ThinkTank 512 is a tool for organizing thoughts, with capa-

### Spreadsheet

#### ✓ Crunch, Paladin Software Corp., Santa Clara, CA

Crunch is a flexible spreadsheet that includes advanced features such as: two sets of recording and programmable macros, iconology for ease-of-use, LaserWriter support, four integrated business graphing capabilities, one defined worksheet area for a database, linking of spreadsheets, a programming language and very capable financial and mathematical functions. Additionally, macros can be hooked into the on-screen icons, which are user-defined and designed. The documentation, written by Susan Keohane and Kathleen Vian, is a definite plus. Crunch allows the logic of any model to be verified through its auditing capabilities. It calculates faster than similar software running on an IBM PC. This is a perfect spreadsheet tool for small-to-medium sized business. In MACazine's October issue, author Will M. Tompkins reviewed Crunch in Powerhouse Spreadsheets.



## Spreadsheet PLUS

- ✓ **Excel**, Microsoft Corporation, Bellevue, WA

Certainly the most impressive of the integrated spreadsheet offerings, Excel offers extensive calculating capabilities for the power user. The program supports Switcher, can access up to 1MB of memory, offers an awesome 256 columns by 16,384 rows, and enables several different worksheets to be on the desktop at the same time. This last capability means that spreadsheet linking is very easy to manage. A window can be split both horizontally and vertically and names can be pasted into a function or formula directly from the names directory. The Undo command can sometimes undo the user, but Excel always warns you if you can't proceed with an action. At that point it's up to you whether or not to go ahead with the decision. Tables can be incorporated with this integrated spreadsheet program, which also features two kinds of macros. There is a function macro that returns a value after performing a calculation and a command macro that automatically initiates a series of actions. Forty-two(!) different types of business charts are an integrated part of Excel, which has superior database capabilities that include three sort levels, computed fields, and display of database records anywhere within the worksheet. This is THE business pack-

age professionals have been searching for without the encumbrance of too many integrated functions. Again, see Will's article in the October issue for additional information on this superior business offering.

## Word Processor

- ✓ **MS Word**, Microsoft Corporation, Bellevue, WA

Although Word was released last year, to date nothing has been introduced to challenge its supremacy as the power word processor for the Macintosh. From the program's ability to access letter-quality printers, LaserWriter support, viewing on screen what will ultimately be printed, four accessible windows and columnar capabilities, MS Word is still the most flexible word processor for the Macintosh. The fact that you can integrate it with other Microsoft programs is a plus. Dedicated keyboarders can use keyboard commands that mimic most of the pull-down menu selections, thereby maintaining rapid typing speed. Word can also open other word processed files for inclusion in its own documents. A must-have tool for all writers.

## Educational

- ✓ **ChipWits**, BrainPower, Inc., Calabasa, CA

ChipWits is a marvelous program for in-

troducing beginners to the world of programming. You must succeed in designing the best robot possible via the use of on-screen icons that represent specific actions. This Icon-Based Operating Language (IBOL) offers a tactile method of accomplishing programming tasks and does not require that you know English. Trying to get your robot to operate correctly is the fun with ChipWits, so much fun you won't even realize you've been educated until you leave the environment. Young or old will delight in this educational treat.

## Speech Synthesis

- ✓ **SmoothTalker**, FirstByte, Long Beach, CA

SmoothTalker manages speech synthesis for the Mac in either male or female voice. No hardware additions are required for this text-to-speech software program that enables you to incorporate speech synthesis into your own programs. Acronyms are said exactly as you define them; there is a dictionary function that enables you to store defined words for future use. Phrasing and intonations, abbreviations, salutations and punctuation are all part of SmoothTalker's many capabilities. Text can be read and pronounced from other program files or it can be input directly into the program. This is a superbly engineered product. Look for an upcoming review in MACazine.

## Peripherals

- ✓ **MacPortAdapter & Numeric Turbo Touch**, Assimilation, Los Gatos, CA

Macintosh users have long desired the ability to access IBM printers and other parallel peripherals. MacPortAdapter provides an instant solution for accessing top-of-the-line parallel peripherals by providing a cable that plugs into the Mac's modem or printer port—all without losing your original port! Low cost and expedient connection make MacPortAdapter a must for the Mac user who requires access to a parallel printer or other peripheral.

Speedy data entry is now possible with the NumericTurboTouch, a combination trackball and numeric keypad for the Macintosh. You can speed up data entry, and with the direct function keys, your fingers don't leave the keypad to depress the Option or Command keys. The gyroscopic trackball is perfect for quickly moving the cursor. We note a better than 50% increase in our data entry when using this product.

- ✓ **MouseArtist**, Village Computer Resources, Lakewood, CA

Most Macintosh drawing tools leave a great deal to be desired when you want to trace illustrations accurately into paint or draw programs. Not so with MouseArtist. Just fit your mouse into the MouseArtist's clamp, place the abrasion resistant acrylic board atop the image to be copied, and

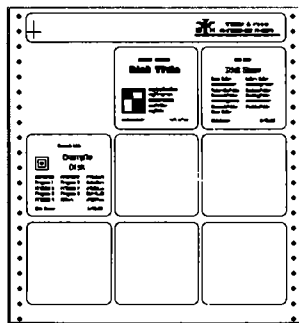
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move the tracing indicator onto the artwork you wish to duplicate. Then simply follow the outline with the tracing indicator. You can fill a printed page with pictures as large as 6 × 7½ inches.

### Utility

✓ **Switcher**, Apple Computer, Cupertino, CA

Switcher is THE utility program that has redefined the term "ease-of-use." It allows you to load and move between several applications with a simple mouse click. No more returning to the finder to access another program, no DOS commands to input. We use Switcher for our newsletter, loading in PageMaker, a drawing program and Microsoft Word, and access word processed files and MacPaint graphics for delivery into PageMaker for manipulation into the newsletter. We save a lot of time! With a hard disk drive, you can access even more applications. Wait until you try Switcher with Excel and MS Word for instant cut and paste capabilities! See Charlie Jackson's suggestions for using Switcher in this issue and Art Denzau's configurations in the November issue.

### Mac Sets The Standards

Interfacing hostile computer systems into a single network is no longer a dream but a reality—the Macintosh started the dialog. You can now buy the best computer for your needs and not have to depend upon a *standard* because that was the only choice. By using a network like TOPS, any combination of computers is possible.

Our best of '85 is certain to draw heated response from those who disagree with our choices or who feel that their favorite was slighted. However, there is one fact upon which we should all be able to agree: the Macintosh is certainly the computer for all reasons.

○ —Hartley and Patricia Lesser  
with Barbara J. Chan

Hartley and Patricia Lesser publish their own computer industry newsletter and have founded and edited several national computer publications.

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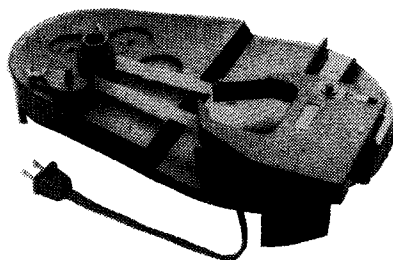
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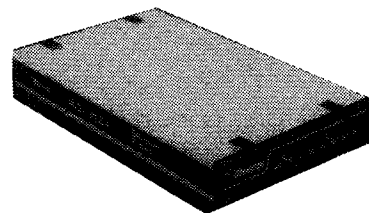
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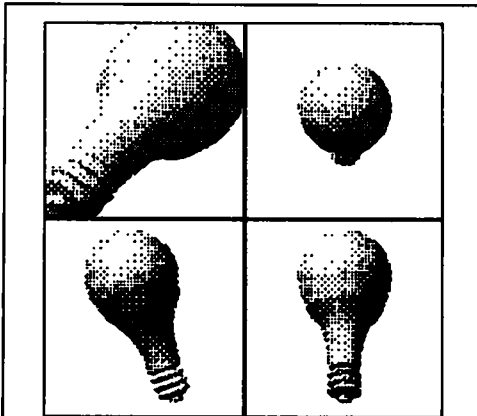
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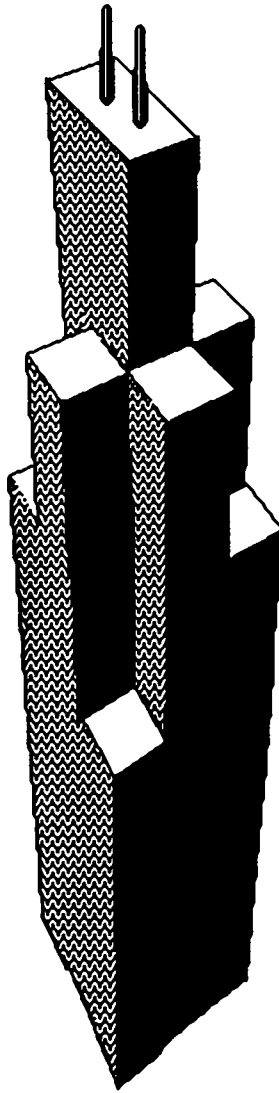
*Easy3D will simultaneously display your design from four different views as you create it. (Picture shown here and at right reproduced from actual printouts.)*

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# Two Management Programs

## MacProject

**T**ime management and the effective use of time is crucial in business. To be successful, you must know your resources, whether actual personnel or materials, and estimate costs accurately. MacProject is a program that helps the business person manage and plan all of the above and more. The program shows you graphically how to manage a project from milestone to milestone by charting critical paths, slack time, and resource usage, and also how to control costs. This program allows you to effectively control your project from start to finish.

It takes advantage of the Macintosh user interface—pull down menus, editable task boxes and a combination of commands and alphanumeric keys to press that duplicate pull down window commands. The normal Macintosh short cuts apply to MacProject, such as command key equivalents for menu selections and using the Return and Tab key to move through task boxes.

MacProject has two outstanding features: (1) you can make changes in a project's schedule and the program will immediately recalculate the entire chart to reflect the alterations(s); (2) you can select the time units (minute, hour, day, week or month) for the schedule's duration scale. The latter allows you to not only chart projects that extend over several months, but also to map smaller time frames. If you select Calendar, the number of hours in a normal working day will be set as well as special business holidays or overtime. Your unit cost of personnel and materials is automatically calculated from this information. You can also determine the fixed costs and income for any task.

First you draw task boxes on screen by clicking in the document window and dragging the mouse diagonally from left to right. The number of tasks you can have per project depends on the amount of memory your Mac has (up to 2,000 tasks with a Fat Mac and approximately 200 with a Skinny Mac). Next, you can insert text into the box that describes the task. You will need to assign a specific time unit to each task and indicate the resources (material or personnel) to be used. To enter this information, click on a task box to designate it as the one to receive the data, and then click the task information window to the forefront.

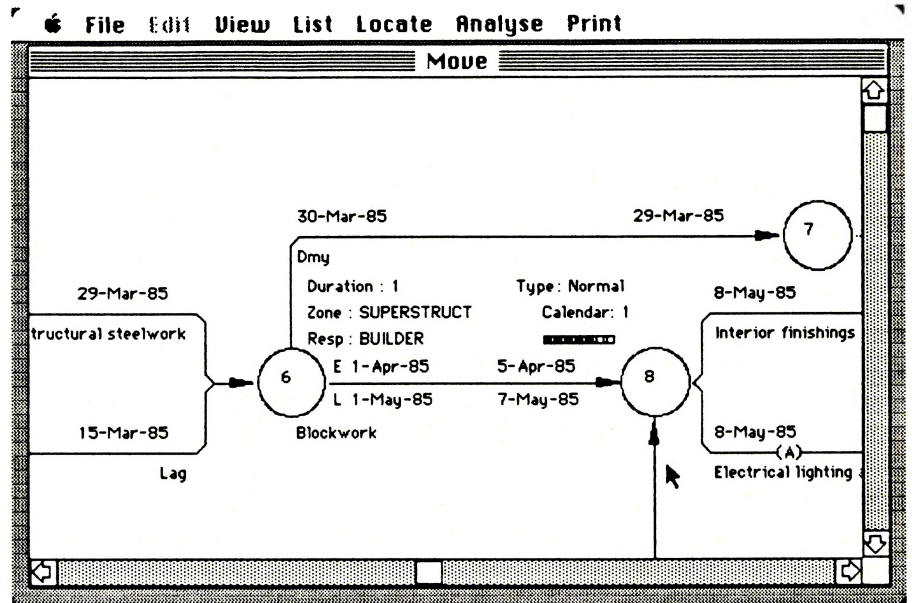
You can assign up to six resources to any one task; each resource can also be assigned to other tasks. Fifty is the maximum number of resources you can assign per project. Critical paths are shown by

**P**lanning is an integral part of everyone's life. We are constantly deciding what to do with our time and resources, and most of us can function quite well without electronic assistance. For the manager, however, planning is a serious and complex task. For any given project, multiple resources are needed: people, tools, cash, etc. The quantity and availability of these resources will vary over time. Some resources, such as salaried employees, are available at least five days a week, while others may only be available on certain days or weekends only. The task of coordinating and tracking a project in the most cost or time efficient manner can be a laborious and mind boggling process.

makes maximum use of the Macintosh interface, with the result being a program that is at once easy to use and extremely powerful.

I am going to reverse the normal sequence of my reviews by talking first about Micro Planner's documentation, which is first class. For any developers reading this article, I strongly urge you to buy this package if for no other reason than to emulate the style and content of the manual. I think the secret of success here is that it was written by one of the original developers of Micro Planner, Glynn Nixon. The result is a clear, comprehensive understanding of not only what the program does, but why and how it works. For many other program manuals, it is all too

## Micro Planner



*MOVE—this is a portion of a project model. Circles are events and lines are activities.*

Major corporations have had access to mainframe project planners for quite a few years, but only recently have programs been developed for the micros. MacProject was the first project planner for the Mac. While it can be quite useful for simple planning, it is not well suited for projects with any meaningful complexity.

Micro Planner, by Micro Planning Software, represents a quantum leap in sophistication and power over MacProject. This version was born out of other programs known as The Planner, Planner 20, and PERQ Planner which have been used successfully for many years. Micro Planner

painfully obvious that the author has little understanding of what's going on inside the "black box."

The first chapter introduces you to the main features of Micro Planner by leading you through a simple example. Bit by bit you're exposed to project planning jargon.

The next few chapters fill in some of the details by explaining the program's more sophisticated features. I was particularly impressed by how Nixon can reduce high-level concepts to simple language. One example is the explanation of resource analysis, where the ingenious analogy of a bulldozer is used, complete with cartoons.



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At last—sophisticated project management software for the Mac! Micro Planner helps you identify crucial, insufficient, and excessive resource requirements, fixed and variable costs, and critical deadlines. Simplifies tracking large, complex projects of up to 500 tasks with easy-to-read network charts and histograms. Identifies where you're ahead or behind schedule, and lets you compare "What if?" scenarios for adjustments.



bold lines and edge around the task boxes; milestones are shown by boxes with rounded edges. Of course, if the project's conditions change or you ask a "What happens if . . ." question, the program will instantly modify the graphics.

After you set the starting date, the program will automatically calculate the correct dates (or times) for each task. To display other information with each task, select the Show Dates option from the Dates Menu. You will see a task box with the type of information you can add: resource, earliest start, duration, earliest finish, latest start, fixed cost, latest finish, and fixed income. To add any one of these to the task box, simply click the cursor inside the particular element you want shown on the schedule. As long as you space the task boxes far enough apart on the schedule chart, all of the information will be quite legible.

Seven charts are available: schedule, resource timeline, task timelines, task cost entry, resource cost entry, cash flow table and project table. Each of these charts may be cut or pasted into other application programs. The layout menu allows you to choose your chart sizes, ranging from 8"H x 10"W to 48"H x 94"W. Each of the charts is described .

- The resource timeline chart shows you who's doing what and when, and the amount of slack time for each person. Slack time is represented by a grey area in the tasks which contains the name given it in the schedule chart.

- The tasks timeline shows each of the project's tasks over a period of time. Slack time is shown in grey on this chart also. Those tasks that show no grey shading are critical. The program displays information in an understandable format, even for the most novice user.

- The task cost entry chart shows your fixed costs and income. These data are figured in just once for the task that has been assigned to them. These tasks are duplicates of the ones that appear on the schedule chart.

- The resource cost entry chart manages your resources' unit cost (salaries, rentals, etc.) in either single or multiple accrual methods.

- The cash flow table uses the timeline scale to reveal how much money you have available at any time in the project—sometimes an enlightening revelation!

- The project table offers detailed information on each task. This data can be pasted into other programs (in a data, not a graphic format).

I had no trouble running MacProject. The program operates on a 128K, 512K and Mac XL, with or without a hard disk drive and with mechanical and optical mice. Booting with a Mac XL is more complicated: MacWorks must control the environment for this disk's operation. MacProject can be copied onto a hard disk.

The 132-page manual covers, in depth, all of MacProject's capabilities and is extremely well-written. It includes a reference guide, glossary and index. Both the audio cassette and guided tour of MacProject are a real boon to learning the program. The disk is sold with a 90-day warranty. Although a local telephone number is given inside the documentation, there is no toll-free number for customer support.

I predict that corporate and small business people will find MacProject useful. Its flexibility and ability to automatically calculate changing conditions allows for continuous project review and should aid in handling surprises. Entering data and accessing menus is easy and the resulting schedule charts and other tables are professional in appearance. If you manage projects and their budgets, you will find MacProject very helpful.

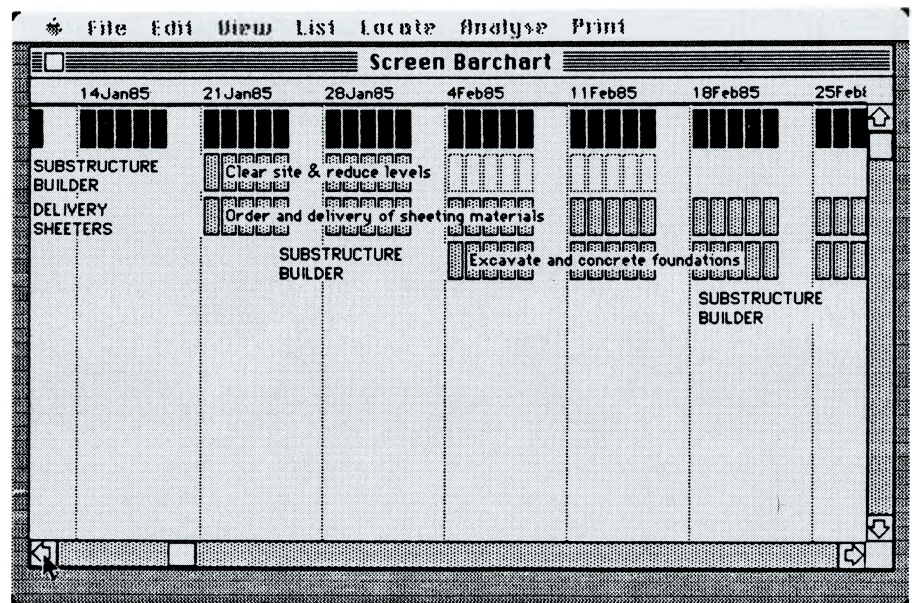
●—Hartley G. Lesser

#### Micro Planner cont. . . .

The author is not afraid to share with the user the inner workings of the program. Frequently, the reader is led through a step-by-step description of various analyses being performed by Micro Planner. Most manuals avoid this, because (I suspect) the authors think that lengthy documentation is intimidating. I believe that the more you understand how a program works, the less intimidating it becomes.

Further chapters reveal the author's expertise in project management. They offer handy tips on how to map out the basic project logic ahead of time, monitor project progress, format management reports, and the like. You're not just learning Micro Planner; you're also being treated to a well-designed course in project management.

The extensive reference section contains "exploded" versions of every window and report with pointers and explanations of every feature. This is a terrific time-saver when you don't require a full-blown description. Three appendices offer a sample project to test your skills, how to interface with Multiplan, and yes, even how to tape your multi-page reports together. There's also a glossary, which not only defines such terms as ladder structure and hammock activities, but also standard Mac terms such as double-click and go-away box. Nowhere are you instructed to "see your Macintosh owner's manual for further



BARCHART—this is an activities time scale

er information," because it's all there in the Micro Planner manual.

Well, enough about documentation. For those unfamiliar with project management, a brief description is in order. If you already know this stuff, skip over.

The discipline of project management is simply the modeling of the sequence of activities and events necessary to complete

the task at hand, and the allocation of the necessary resources (people, tools, supplies etc.) in an "efficient" manner. (More about why "efficient" is in quotes later.) The construction of a building is one example of a project. It's obvious that in order to build the framework (an activity), you must first have finished the foundation (an event). To lay the foundation

(activity), you must first have finished clearing the site (event). It can be seen, then, that a project follows the sequence event-activity-event-activity and so on. Activities, unlike events, usually take time (have a duration), incur costs and employ resources.

For a project of any complexity, separate events and activities often parallel each other. For example, steel and cement for the building can be delivered while the construction site is being prepared. The shorter of parallel activities is said to have "float"—that is, there is some flexibility when to start it without jeopardizing the final completion date.

Once the various events, activities, and resources have been modeled for the project, Micro Planner can perform two basic types of analysis. A time analysis computes the earliest and latest dates each particular activity can start and finish, based upon the duration and dependencies of other activities surrounding it. As mentioned above, some activities which have "float" can start later than its earliest date and not affect the final completion date. Those without float are called critical activities—any delay in them will cause an overall delay in the project. Micro Planner generates various graphs and reports which allow you to identify these potential "bottlenecks" and plan for them in advance.

But this time analysis is only half the story. Resources must also be analysed to determine their efficient use. Micro Planner provides two types of resource analyses to address different definitions of efficiency. One asks the question, "How many resources do I need to finish on time?" The other asks, "How long will the project take with the resources I have?" These analyses, not found in MacProject, allow you to determine if more resources are required to complete a project within the imposed deadlines. Alternatively, you can determine the additional cost associated with a deadline (e.g., the cost of overtime or additional people put on the job).

To give you some idea of Micro Planner's degree of sophistication, there are eight different types of activities, called Normal, Dummy, Lead, Lag, Ladder, Non-Split, Consecutive and Hammock. Since these are so well described in the manual, I won't reproduce that effort. Suffice it to say that virtually every type of logical activity has been allowed for and can be effectively modeled with the program.

Each activity can be assigned a duration which is expressed in weeks and days. Micro Planner allows you to define up to six calendars, such that a "week" may be defined differently for different resources. For example, some of your employees work a normal five-day week, while others are available only on weekends. You can

even block out certain days of the month for holidays and the like.

Up to 26 resources can be specified for a project. Each can be defined as normal (available for work each day, like people) or pool (actually consumed, like bricks). You can specify up to 20 change points per resource, which allows you to "deliver" 2000 bricks on October 1 and an additional 5000 on November 1.

Once resources have been defined, you may specify how they will be used in various activities. Each activity can use up to 20 resources. Further, resources don't have to be used for the entire length of an activity. They can start later and finish earlier than the time allotted for the activity.

Building a model is quite simple. When you first start, an event (represented by a circle) is automatically provided. To define an activity and a subsequent event, simply click on the circle and drag to either the left or right. Dragging to the right tells the program you're defining an activity which follows the event; dragging to the left defines a preceding event. As each activity is defined, it is automatically centralized on the screen, so there's no hassle with scroll bars. Spaces are provided for you to enter a description of the activity (200+ characters), its duration, resources used, any self imposed deadlines or earliest start dates, and various sort codes for subsequent reporting.

There are no artificially imposed sequences for entering events and activities. If you're so inclined, you may start with various sub-activities and tie them into the main model later. Micro Planner will alert you during its time analysis if you have any "dangles," i.e., loose ends with no start and/or finish.

Unlike MacProject, Micro Planner automatically draws the project model for you. This on balance is an advantage, because it relieves you of that burden and the output looks quite professional. However, there is no way for the user to alter its appearance.

Micro Planner generates numerous reports which are comprehensive and well conceived. The barchart, which plots activities on a time scale, gives you a comprehensive overview of the entire project.

This report, as well as most others, can be sorted such that activities appear grouped by "zones" (such as Site Clearing, Foundation, Superstructure, etc.) and "responsibilities" (perhaps using the names of managers involved in the project). You can even suppress the display of float time on reports to avoid advertising spare time to project personnel.

Other reports include listings of supercritical activities (those activities which are preventing a deadline from being met), progress reports (compares projected versus actual results), short term schedules which list only activities for the next month or so, and histograms which dis-

play resource usage. Most reports allow you to select the data you wish to display, such as selected types of activities, zones, responsibilities, or resources used. Micro Planner supports both the 10-inch and 15-inch Imagewriter. Laserwriter printing is currently limited to histograms and network diagrams, but full support will be available with the next upgrade expected shortly.

Should you decide to purchase Micro Planner, you'll find yourself in the company of some major institutions such as NASA, Northrop, Peat Marwick, Lotus Development, and Raytheon, to name a few. If you are still somewhat intimidated by the field of project management, Micro Planning Software provides one- and two-day seminars for your personnel at reasonable rates. They also provide consulting services to adapt your organization to a project planning environment, and will even provide custom programming for such things as multi-user applications and mainframe tie-ins.

Micro Planner is a top-of-the-line project management package. Its features, flexibility, and sophistication should serve most users' management needs. This is the kind of program Apple sorely needs to break into the ranks of medium-sized and Fortune 500 companies, yet it also can be well utilized in Mom and Pop enterprises. To paraphrase Bum Phillips, "It may not be the only one in its class, but it doesn't take long to call the roll."

#### Micro Planner

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●—John Venable

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John is a Contributing Editor and Corporate Banking Vice President at Central Bank of the South.



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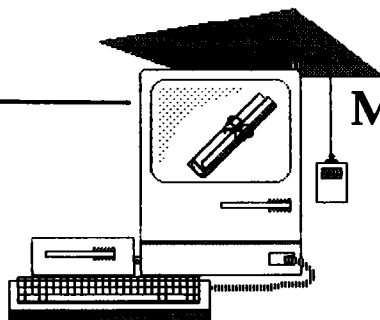
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## MACademia

**T**his school year should prove interesting for the Apple University Consortium (AUC). Bud Colligan is the new head AUC person at Apple, and Steve Jobs wants to market a product aimed towards the university crowd. And now for something completely different . . .

Bud replaced Dan'l Lewin who has left Apple to join forces with Jobs. Trying to get in touch with Bud is like trying to contact Ronald Reagan. I have been in touch with other folks at the AUC schools. They tell me that communications between the AUC schools and Apple is getting worse. However, I think this may be a relative issue. The folks at the University of Washington have had few problems communicating with Apple. But it does bring back the point that I made in the October issue. That is, the lack of coordinated communication between Apple and the AUC schools and among the AUC schools themselves. There is a lot of great development happening in the AUC. The MACazine is attempting to cover as much as we can. Without good communication the public may never know of the AUC success.

As of this writing I have not received the latest issue of *Wheels for the Mind*, the AUC publication. Apparently, there have been editorial and publishing delays. As soon as it comes, I'll bring you up-to-date.

### Projects

On a more positive note, I have received some information from The University of Western Australia, The Centre for Tertiary Education Studies. The U of W.A. is a member of AUC Australia. The Centre is developing a software evaluation database using Helix. The project is headed by Michael Scriven, Professor of Education. It will contain evaluative information on commercial programs, consortium programs and freeware programs (including free public domain). Michael hopes that this database will provide an incentive for commercial and consortium developers. He also feels that the database will assist the universities with their software selection process.

The database will be quite extensive. They plan to circulate the final product in three ways: (1) provide a hard copy of the evaluations to Consortium members; (2) to provide a Helix template with the evaluations; (3) to disseminate the information

via a BBS. Michael indicated that the last method is just a possibility and is still in the planning stage.

Donald Spicer, the new Director of Academic Computing at Dartmouth sent me a copy of their courseware catalog which contains eight programs that have been developed on their campus. I hope these projects are examples of the types of program we will be seeing from all the AUC schools in the future. Here is the courseware list which consists of several programs in different areas:

Drill, A General Drill Program  
Atlas, A Pictorial Atlas Program  
Venn, A Philosophy Tutor  
Appletones, A Music-Learning Application  
Mozart, A Minuet-Writing Program  
SocStat, A Program to Compute Sociological Statistics  
Skel, A Skeleton Macintosh Application  
Binary Trees, A Binary Tree Workshop

For more information on these and other Dartmouth projects contact:

Kiewit Computation Center  
Dartmouth College,  
Hanover, NH 03755

### There Is More

There are a couple of other programs that are beginning to create some waves in the AUC community. Although these programs are not developed by AUC schools, they have made an impact.

The first is EduDisc. I wrote about EduDisc several issues ago. EduDisc is an authoring program that goes a step further. It provides editing control over a video disk recorder. This means that not only can instructors develop an interactive course on the Mac, but now they can add optical disk interaction as well. Imagine a course where the student not only interacts with the computer but also has the added advantage of interactive video. EduDisc does all this and more. The folks at EduDisc have been actively involved with AUC schools. For more information contact: EduDisc, 3501 Amanda, Nashville, TN. 37215, (615) 269-9508.

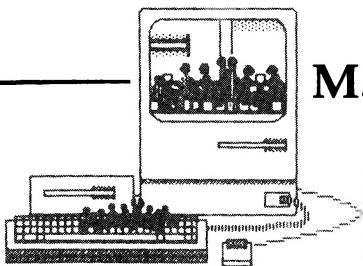
Another company is the Z.A.P. Logic, Corp. Z.A.P. makes the Granny Smith Connection (GSC). The GSC is a Parallel printer adapter for the Mac. But the secret is not in the hardware, it is in the software. The GSC contains printer drivers for over a dozen different parallel printers. The GSC has received some high praise from Peter Olivieri, editor of *Wheels for the Mind*.

### Final Word

Steve Jobs and his group are planning on marketing products to the university







## M.U.G. Shots

**T**here's good news and bad news.

First, the Good News

An important event for MUGs took place recently in Cupertino. Corporate Apple asked the leaders of 15 Apple User Groups, including Apple II groups, to attend a workshop. The primary purpose of that meeting was to find ways in which Apple could improve its relations with user groups. Finally! I guess Sculley really meant it when he said that Apple was going to be more responsive to the market.

The group was asked to put together a report on the ways in which they thought Apple could better interact with user groups. The final report was then presented in person to all of Apple's high ranking executives, including Sculley (with LaserWriter produced charts and all). The report began by presenting some facts about user group members that had been gathered from surveys conducted by some of the user groups on their membership. For example, they told Apple that 74% of us have college degrees, that 62% of us have incomes above \$40,000, and that only 40% of us use our Macs for business but that 40% of us authorize purchases of computers in our business or organization. They suggested that the major functions of user groups were to educate, publish newsletters, hold meetings, disseminate public domain software, and provide telephone hotline support for members. (They may have forgotten about putting together group buys of hardware and software for greater discounts, providing forums for vendors to present and advertise their products, providing feedback to software and hardware producers about consumer needs and suggestions for improving current products, and giving users an opportunity to interact with other people who share a common interest.) They tried to convince the executives that user groups offer almost free support and education to Apple's customers and thereby increase the value of Apple's products, that MUGs build customer loyalty (How many Mac owners were Apple II owners first?), that they assist dealers by performing functions the dealers should but cannot perform, and—bottomline—that they generate sales of Apple systems and add-ons. Sounds pretty good to me. I believe it.

The user group representatives made five recommendations about how Apple could improve its relations with us.

- They proposed that an employee at Apple should be declared a User Group

Evangelist. This person would act as liaison between Apple and MUGs, keep MUGs informed about Apple's thinking, provide a ready means for groups to give feedback to Apple, and facilitate communications among different groups (something that I think is desperately needed). The evangelist could also help new groups with bylaws and other organizational matters.

- They proposed that a formal mechanism of communication be established between user groups. This special channel would provide user groups with information about new products, upgrades, Apple policies, and technical information that might help users, such as, Outside Macintosh. But of most interest to me at least, was the proposal that user groups be given access to AppleLink. This is the information and technical bulletin board that Apple makes available to its dealers. It is a dynamite BBS.

- They suggested that Apple formally encourage its dealers to cooperate with user groups. This might include such things as dealer loans of equipment, use of dealer space for user groups classes and seminars, as well as, dealer specials to user groups members.

- Apple should loan equipment to user groups for use in demonstrations and group meetings. The equipment might be projectors, large monitors, about to be released products, as well as computers.

- User groups should supply Apple with their meeting schedules and plans so that Apple could provide user groups with suggestions for high quality and interesting speakers, e.g., Bill Atkinson, Bruce Horn, Allan Kay, Andy Hertzfeld, Steve Capps, or any other person with inside knowledge of Apple. They also suggested that Apple might help find speakers from the user group's local area such as nearby software and hardware developers.

Now what? Unfortunately, I do not know what Apple will do with these suggestions. I don't think that they have decided yet. But, the mere fact that they held this meeting suggests that Apple is interested and would like to get something going. Now is your chance. Let Apple know what your group thinks about these suggestions. Write to Sculley. If you can think of other reasonable ways that Apple might help 150 MUGs, short of giving away equipment, tell Apple about your group's ideas. Sculley wants Apple to be market driven. MUGs are a large part of the market. When you send your ideas, let Apple know how many are in your group and what percentage of the members agree with your suggestions. Let's prove to Apple that MUGs affect sales.

## Now the Bad News

**P**artly as a function of this meeting of minds, Apple has discovered that user groups are putting Apple's System and Finder on the public domain disks that are being sold to group members. This creates a legal problem for Apple because, technically, the System and Finder belong to Apple and for obvious reasons (the Amiga and Atari 520 ST), they have not placed these programs in the public domain. (Actually, they have done just the opposite in a recent settlement with Digital Research that requires that Digital Research make GEM look less like the Mac's user interface.) All developers who include the System and Finder on their disks have paid Apple a licensing fee for these programs. User groups have not and Apple is worried.

Our local group contacted Apple about this and we were told that the standard fee is \$50.00 per original disk. If a user group sold copies of, say, 20 different public domain disks (in whatever quantities and at whatever price) and each included the System and Finder, the user group would have to pay Apple \$1000. Hmmmm. Doesn't sound too thrilling, does it? Most user groups only charge somewhere between \$5.00 and \$10.00 per public domain disk. Those groups charging the smaller fees would have to sell at least 20 of each disk of the month just to pay off Apple and cover the costs of production.

Of course, the entire problem can be avoided by taking the System and Finder off of public domain disks. On the other hand, when our local group suggested that solution to the public domain librarian, he threatened to quit. Including the System and Finder gives him the opportunity to be creative with start-up screens, icons, menus, and dialog boxes. Take that away, and he claims there is nothing left to the job.

If your group would like to express its opinion on this issue, I suggest that you call Terri at Apple (408-996-1010). She is one of the people handling this issue at Apple. Our local group has over fifty different public domain disks, all of which include the System and Finder. Obviously, we are attempting to negotiate a different arrangement.

Apple, are you listening?

☐—Ebbe B. Ebbesen

Ebbe B. Ebbesen is a Contributing Editor and Vice Chairman of the San Diego MUG. Letters, requests for MUG mailing addresses, and news about your local MUG that you would like to appear in this column can be mailed to 13267 Silver Saddle Lane, Poway, CA, 92064. Include SASE. Or contact Ebbe on CompuServe 74176,126.



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## 1.5Mb

### A 4 Mb Future

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A welcome addition to TheMax is MaxPrint, a print spooler that takes the waiting out of printing. MaxPrint loads your text or graphic at RAM speed and feeds it to the printer so you can keep working. MaxPrint is a desk accessory that's there when you need it.



### TheMax is Available Now

TheMax, complete with memory board, MaxRAM software, MaxPrint and a 90-day warranty, is available for both the 128K and 512K Macintosh. MacMemory also continues to offer 512K upgrades at better-than-Apple prices. Both TheMax and 512K upgrades are also available as kits.

**Ask Your Dealer for More Information,** or contact MacMemory Inc., 473 Macara Avenue, Suite 701, Sunnyvale, California 94086. (408) 773-9922.

## MacMemory Inc.

†Due to the unavailability of the one megabit chip, MacMemory anticipates but cannot warrant expandability to four megabytes. The expected production release date is early 1986. Apple is a trademark of and Macintosh is a trademark licensed to Apple Computer Inc. Jazz is a trademark of Lotus Development Corporation. TheMax, MaxRAM and MaxPrint are trademarks of MacMemory Inc.



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# Dream Macintosh Office



## Christmas Past

**T**he Macintosh Office is a dream remembered. It was always an illusion, a mirage created by Apple's marketing strategy to compete with IBM on Big Blue's own turf, corporate America. Now it's a memory. In a recent interview, Bill Campbell, executive vice president of sales at Apple, repeated Apple's obituary for the Macintosh Office. "It was foolish to emphasize products we didn't have, we couldn't deliver," he said. "It was a mistake, a marketing error. We admit it. We will no longer talk about any product until it is ready to ship."

Strangely, Macintosh users didn't moan or cry over Mr. Campbell's condemning eulogy. The reason they aren't mourning is because hundreds of third party developers have delivered Macintosh Office products. As a marketing strategy, The Macintosh Office is dead, but the concept of a low-cost computer network and work environment for small groups is very much alive. Viable products for it are here now. Not powerful, expensive products for big business, but advanced, practical technology for individual users. The MACazine staff looked at most of these products and, since Christmas is a time of dreams and wishes, we made a wish list from the best of them. We looked at storage and input devices, AppleTalk and network products, and finally, the new ImageWriter II printer. We didn't limit our wish list either. We also included products about which we can only dream.

## Hard Candy

For data storage, some of you still use the Macintosh's one built-in, single-sided disk drive. Or, perhaps you added an external floppy drive. In the early days of the Macintosh, these were the only options. Today, however, choices abound. The chart presents information on 38 storage devices and their capabilities currently available for the Macintosh. Included are hard disks, removable cartridge disks, combination hard disks and removable disks, combination hard disks and tape drives, and external RAM systems.

There are four types of mass storage devices: hard disks, removable cartridges, RAM (random access memory) storage, and tape systems. Hard disks are fixed media, fixed in the sense that there is a specific upper limit to the amount of data they can store. A removable cartridge system, on the other hand, stores data in a way analogous to that of floppy drives. If you need an additional 5MB of storage, you simply replace the original 5 MB cartridge with another one.

The DASCH (disk acceleration/storage control hardware) units from Western Automation of Boulder, CO, are RAMdisk devices. Unlike magnetic media devices like hard disks, cartridge and tape systems, the DASCH units contain no moving parts. They store information electronically inside memory chips exactly like the memory chips inside the Macintosh. Since chips have no mechanical parts, access to data is instantaneous. Response time with DASCH units should be unparalleled compared to the other types of storage devices. Although the largest single unit offered by Western Automation contains only 2MB of RAM, up to eight such units can be linked together.

Tape storage systems are another alternative. Tape is available as a backup media with Sunol Systems units. Although many tape systems require that the tape be read and written to sequentially like the cassette player in your stereo system, the Sunol Sun\*Safe device uses a random access method of reading and writing to tape thereby speeding the time required to backup critical files.

## Making a List

Most of the column headings in the chart are self-explanatory, a few require some elaboration. *Capacity* refers to the storage capacity of the unit in megabytes (MB). In those instances where two types of units are combined in the same package (e.g., a hard disk and a removable cartridge disk), the figure refers to the combined capacity of the units. This is generally appropriate since the secondary unit,

usually a tape or cartridge, can be used for direct data storage as well as a backup or archiving device.

*Partitioning* refers to the ability to divide the storage device into a series of logical volumes, each of which looks like an additional disk drive to the Macintosh. The advantage of partitioning is two-fold. Since each partition or volume is seen by the Finder as a separate physical disk drive, the standard limitation of 100-125 files per disk can be overcome. Partitioning removes all worry about not being able to fully use a drive's physical capacity.

Second, the *Finder* acts as though the entire contents of your storage unit consists of only those volumes that are currently mounted. A mounted volume is one that is in use and displayed on the desktop. If you make a point of mounting only those volumes that are required during a particular computing session and promptly releasing or dismounting those volumes that are no longer required, the Finder has less information on the desktop to keep organized. Hence, faster disk access and response times. The Apple 20MB hard disk includes its own Finder and File System.

The *File System* is a hierarchical file structure that facilitates the management of large numbers and multiple levels of files. The File System looked slow and complex when we saw it last September. This should change when the new Macintosh operating system ROM (read only memory) chip is released. The Macintosh ROM contains the Mac's entire set of operating instructions. The ROM upgrade is expected to significantly increase the speed at which the Macintosh executes these instructions, especially instructions that read and write to hard disks and floppies.

*Print spooling, backup programs, and password protection* are additional software features available with some units. Print spooling is the ability to send one or more documents to the printer and print them while continuing with other computing activities. There are several public domain and shareware print spool utilities avail-

able for the Macintosh including Mock-Printer from CE Software. All these utilities print only unformatted text files, no special fonts or graphics. There are print buffer devices such as the Macintosh Max from the Canadian company DataSpace and Universal Data Buffer from Handzon Data, Inc. of Woodinville, WA. Print buffers store and print formatted documents while you continue working. Max is AppleTalk compatible and performs double duty as RAMdisk storage.

The price listed on the chart is the suggested retail price. Cost per MB is a rough approximation of the unit's real cost obtained by dividing the retail price by capacity. It should be considered only as a guideline, applicable only to the hard disks and RAMdisk units. In the case of removable cartridge and tape units, their actual capacity is virtually unlimited since, when one cartridge fills up, you can always buy an additional cartridge. Their limitation is that only one such cartridge can be present in the drive at a time. Although you may have amassed 100MB of information, when a different cartridge is required it will have to be swapped for the current cartridge in the same manner that you presently swap floppy disks.

### Checking it Twice

For those of you who will be acquiring an additional storage device in the near future, some of the primary considerations will be: cost, capacity, ability to back up the contents of the storage device, and networking capabilities. In general, cost varies in direct proportion to storage capacity. Price only seems to drop below \$100 per MB with devices capable of storing at least 50MB. The exceptions are the 20MB units from Apple Computer and Quark, and several of the combination hard disk/tape units from Sunol Systems. From the standpoint of price, they appear to be bargains.

How much storage do you really need? Although it's tempting to want the maximum, only a small percentage of users could fully utilize a 100MB unit. For most individual users operating outside of a business setting, we suspect that between 10 and 20MB will be sufficient. You don't really need to move every application to the hard disk. Programs that are used infrequently can remain on the original floppies. The same 20MB configuration should suffice for most office workers. Only users charged with maintaining massive databases would need a high-capacity storage device.

At present, just over half of the available units include some type of backup software. These range from the very simple—like programs to back up the entire contents of the hard disk onto floppies, tape, or cartridge—to the sophisticated that only back up files that have been modified or

changed. Some have options that automatically make backups at user-selected time intervals. Keep in mind that for units without backup software, you must perform the procedure manually with the Finder. How you deal with files that exceed the size of a single floppy is left to your own ingenuity. This may be a minor inconvenience for individual users, but can be catastrophic for businesses. Imagine your disk-based general ledger disappearing in a hard disk crash the day before the auditors arrive! If you had backup software, you probably would have archived your data more frequently. The easier it is to make backups, the more likely it is that you will make them.

Any of the systems described should be satisfactory for a single user whether or not backup software is included. For simple needs, backups made through the Finder, although inconvenient, will suffice. External RAMdisk storage may also do the trick for you. Although RAMdisks will lose their contents when power is shut off, each contains its own separate power supply. There's no reason that it can't be left on and its contents regularly backed up to floppies. The RAMdisk devices have the advantage of a low entry price, under \$500 for a 512K unit. You can increase storage capacity as funds become available.

For serious business users, on the other hand, a simple and efficient means of backing up important data is a must! If the software bundled with the hard disk provides a way to back up only the information that has changed since the previous backup was made, any of the 5MB cartridge systems will probably do. If you will be handling very large databases, definitely consider the tape systems. In short, many business and professional users should carefully examine the hard/removable or hard/tape combination units, or plan on creating a reliable backup system from a mix and match of these methods and using it regularly.

### Stuffing the Stocking

Getting information into the Macintosh should be as simple and effortless as using the Macintosh. Input devices should make the grunt work of data entry as pleasant as possible. The Macintosh was the first commercially available computer to use the mouse as an alternative input device. You either like the single-button optical-mechanical mouse and use it with relaxed relish, or you hate it and are constantly finding ways to work around it. Either way, you cannot think of the mouse without thinking of the Macintosh. They go tail in hand.

The mouse is the supporting actor of user interface. We looked at several other input devices, digitizers, optical readers, a trackball and could not find a reasonable

substitute. When teletype keyboards replaced data entry switches on old analog computers, we thought we couldn't have asked for anything easier. Then the card keypunch machines were carted off, and we basked in the green glow of video simplicity. When the Macintosh was introduced, its mouse looked like an addendum with a tail—useless. The mouse is, however, indispensable, versatile, functional, and above all, simple. It involves, according to Bruce Tognazzini, outspoken mouse proponent, "the lowest level of brain function possible." With a mouse you can daydream with impunity.

One possible substitute for the mechanical mouse is a better mouse. The A+ Mouse is a purely optical mouse from Mouse Systems of Santa Clara, CA. The A+ moves the screen cursor exactly like the mechanical mouse. We used it the same way we use the Mac's mouse but felt it was more accurate. It did not scoot the cursor cross-screen, one of the Mac's favorite mouse tricks. The A+ contains no moving parts, rather it uses light emitted from diodes and reflected by mirrors onto a special pad. Unlike the optical-mechanical mouse that interprets movement by flashes of light through rotating slits, the A+'s photodetector senses movement as it passes over grid lines embedded in the special pad. Because it has no moving parts, the A+ doesn't accumulate dust and wax buildup.

The A+ Mouse was one of three input products we were able to try out. It even worked smoothly upside down. That's more than you can say for the Mac's mouse. The special metal pad is thin enough not to be bothersome. It was cold to the touch but warmed up quickly. The A+ was accurate without jumps, flicker, or glitches. We did not experience the problem reported by MacWorld that the A+ mouse must oriented parallel to the edges of the pad to maintain consistent pointer and mouse movement. It performed to our expectations. A hint for Macintosh mousekeeping is to attach a "skateboard" (ball bearing glide), such as the Mouse Mover by Magnum, when your mouse's feet wear out. The Apple mouse has two replacement parts, the ball and the mouse. If anything else wears out, you must replace the whole unit.

What we would like to see for the Macintosh is a footmouse similar to that offered for the IBM PC by Versatron Corporation of Hearldsburg, CA. Several MS-DOS programs, including Microsoft Word 1-2-3, and Multimate, use Versatron's footmouse. The footmouse is practical for pointing, however, there are two technical problems. A footmouse for the Macintosh would need to send comparable button event signals to the computer, such as click and double click. It would be difficult to hold the cursor in place and click in one



operation with only your foot. Try moving the mouse and clicking with one finger. Same problem.

The second difficulty for a practical foot-mouse is duplicating a mechanical method of the Macintosh's dragging operation. Dragging pull-down menus is a strictly perpendicular movement. Dragging a range of spreadsheet cells is a diagonal operation. Dragging text is a combination of diagonal and perpendicular movements. The button problem is soluble. Replicating different dragging operations with a foot-mouse would be tough. But it isn't impossible.

Mac-Turbo-Touch and Numeric-Turbo from Assimilation of Los Gatos, CA, are mice turned upside down. Mac-Turbo is a gyroscopic-ball cursor controller. You rotate the trackball with your hand to move the screen cursor. Numeric-Turbo is the same thing with a full function numeric keypad. Two things bothered us about the trackball approach. The trackball sits in a cup in the top of the unit with buttons beside it for clicking operations. This design collects more dust and debris than the mouse. The other annoying thing was that the trackball was located between the keyboard and the numeric keypad. To enter numbers or use cursor key controls you must reach across the trackball.

A numeric keypad that includes number, cursor, clear, enter, and arithmetic function keys should be high on any Macintosh user's wish list. More Macintosh applications include routines that enable keypad entry and cursor key controls. Microsoft Word v1.05, ThinkTank 512 v1.1, Excel v1.0, and Jazz release 1 provide keypad functions that eliminate the need to always grab the mouse to move down a page, a heading, or a cell. While the mouse is a perfect interface for general system operations, a full function numeric keypad is necessary for high speed, heavy duty data entry. If you navigate monster spreadsheets or climb mile high Mac-Project charts, a trackball will make that work easier. It isn't made for use with MacPaint, graphics or drawing applications. Assimilation should offer users the choice of a second Numeric-Turbo which has the keypad on the left, closer to the keyboard. Otherwise, we would wish for Apple's numeric keypad. It is cheaper, and you get to keep the mouse.

## Touching

You can reach out and touch several input devices for the Macintosh. The Koala KAT pad from Koala Technologies, San Jose, CA, is a low end graphics tablet that employs advanced sensor technology. Nevertheless, it lacks the versatility of the mouse and the resolution of a coordinate graphics tablet. It is best used as a substitute for touching the screen, not a replacement for the mouse. The KAT pad takes

over a serial port, so throw in the cost of an AB switch if you want to keep your modem and printer handy. It lugs along its own power supply with a transformer that takes up residence on your surge protector, thereby evicting at least two other lodgers.

Once the pressure sensitive pad is wired up, accompanying software installs the KAT under the Apple in the menu bar as a desk accessory. This has its good and bad points. How you feel about peripherals taking up desk accessory slots has a lot to do with how you work. If you're an eclectic user, you will be disappointed. If your Macintosh is dedicated to a single task or graphics work, this arrangement should not bother you. After a short test of hand-to-eye coordination, you will be able to point with the KAT as well as with the mouse. You can pull down menus and click. When we used a pencil and not a finger, the pad appeared to act more responsibly.

We dream about a touch screen Macintosh. New users always point when something interesting happens on the Mac's screen. Touching the Macintosh's screen is a natural impulse. There are three kinds of touchscreen technology. Infrared beam touchscreens use an invisible grid of infrared beams that surround the screen and signal the computer when a break in the grid is detected. These types of screens have been used in computers like Hewlett-Packard's HP150 since 1983. Sensitive membrane screens and solid glass sensor screens are not as widely used. A touchscreen Macintosh would be an immediate option to every other input device. The guidelines of the user interface would still apply. The user would point, click, and drag with his finger instead of with the mouse.

We window-shopped among the digitizers, joysticks, and optical readers. We saw outlandish products like View Control System (VCS) from Personics of Concord, MA. And we saw charming products like the Polyphonic Keyboard from MacNifty in Minneapolis, MN. The A+ mouse, Numeric-Turbo, and KAT pad were the only devices we played with. There is much more we didn't get to see.

Apple is working on innovations that will continue to improve the user interface and facilitate manual input. Many users have complained about the Macintosh keyboard. They say it is sluggish, thick, that its keys are springy. Apple is rumored to have designed a low-profile Macintosh keyboard which incorporates a full function numeric keypad. Some users will welcome a replacement. More appealing is the rumor that Apple will introduce a microphone and speech-recognition software for the Mac. MacInTalk, a speech generator/synthesizer development utility from Apple, was sent to Macintosh developers

last spring. Voiced data input technology would expand possibilities for the physically disabled to use the Macintosh. It would also enhance the use of the Macintosh for electronic mail and conferencing. But, it is still infinitely more satisfying to listen to human conversation.

## AppleTalk

When Apple first announced the Macintosh computer to the world, they hoped to integrate the Mac into the mainstream of the business community. This meant that Macintosh had to have the power, flexibility and expandability of the large, complex systems that were available. This flexibility and power translated into The Macintosh Office concept. The expandability translated into the AppleTalk Network.

Apple announced The Macintosh Office almost a year ago. With the announcement came promises of a simple-to-install, powerful network. This network would be far less expensive than the competition. There were also announcements of an add-on card for the IBM PC that would connect the IBM into The Macintosh Office. This expansion card would allow The IBM PC to share the LaserWriter and transport files between the Mac and IBM PC. There was also a variety of networking software announced. That was a year ago. To date, Apple has delivered AppleTalk, their low-cost, easy-to-use network and the LaserWriter. No add-on card for the IBM and no software for the network. Now Apple has dropped The Macintosh Office campaign. They will continue to make and support current products for the AppleTalk network, but no new development is expected. All is not lost. Typical of Apple history, third party entrepreneurs are already producing the missing elements of the Macintosh office.

Networking any computer, including the Macintosh, can be difficult and frustrating. Apple took some of the mystery out of the installation process. The simple connection of cables is only the beginning. There is network communications software to configure and more instructions to memorize. The AppleTalk network now consists of several elements. The first is the AppleTalk connector and cable. This consists of two pieces of cable that are connected with a small white box. This box controls the signals that are sent over the cables to the other Macs, the LaserWriter, and/or IBM PC's. Every unit on the AppleTalk network must have a connector. This means if you have 31 computers linked to the LaserWriter, each must have an AppleTalk connector.

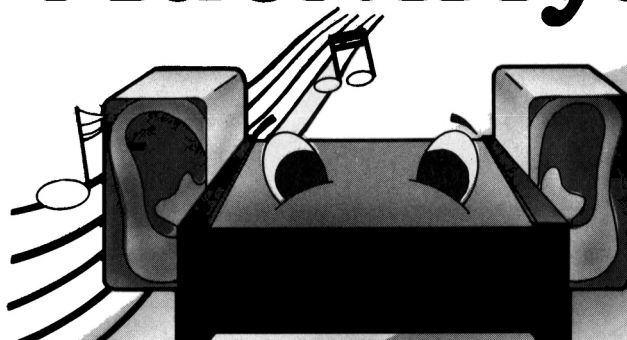
Unlike the IBM PC Network and other business computer networks, AppleTalk does not cost an arm and a leg. Each AppleTalk connector costs \$50. Compared to



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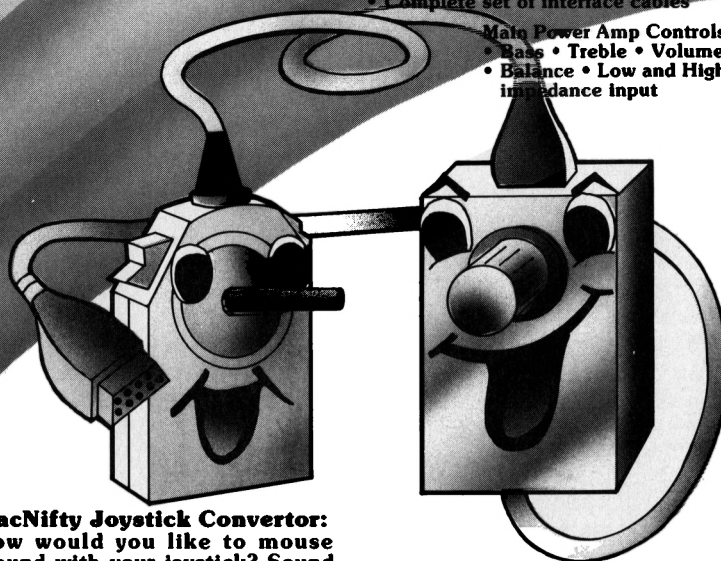
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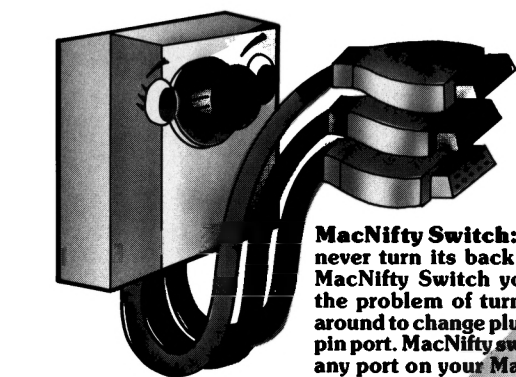


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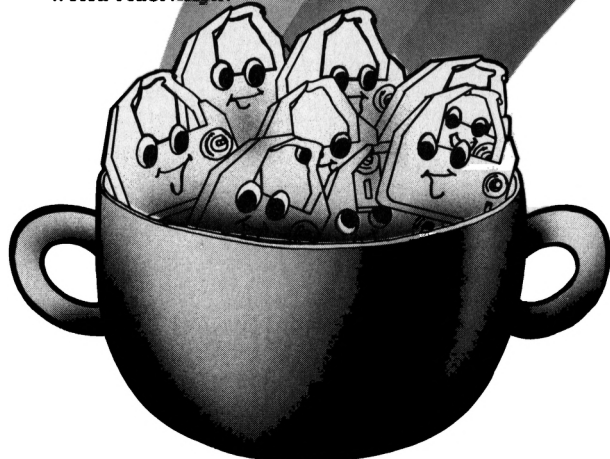
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**MacNifty Ribbons:** Is your Imagewriter color blind? Why not treat your printer to the world of MacNifty color ribbons. MacNifty ribbons come in eye opening colors; Brash Blue, Fire Red, Mellow Yellow, Earth Brown, Sassy Purple, Peaceful Green and Bold Black. For an extra treat let your Mac produce heat transfer prints using Macpaint. MacNifty heat transfer ribbons come in process Red, Blue, Yellow and Black. After printing your masterpiece simply iron on the transfer. Instructions come with each ribbon. Order today! Regular ribbons are \$5.95\* each. Heat Transfer ribbons are \$9.95\* each. Go for it! Color your world MacNifty!!!



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the \$800 per connection cost for the IBM PC Network, AppleTalk makes a Macintosh network practical for small work groups. The Macintosh does not require the addition of any expansion cards in order to communicate over the network. This ability was built into the machine when it was first created. In all fairness, the AppleTalk network is not as powerful as the IBM network—not yet!

### LaserWriter

The communications hardware built into every Macintosh was originally intended to serve several functions. The first was as a modem port. This allows for the connection of an external modem through which the Macintosh communicates with other computers and outside information sources. The second communications function built into the Mac was for sending information to, and communicating with, printers. This included the LaserWriter, but for the Mac to communicate with the LaserWriter some special things needed to happen. Since the Mac is a closed system, Apple engineers designed AppleTalk connectors so that the Macintosh could talk with any device. They followed network standards that permit the Macintosh to talk to the LaserWriter, and, while they were at it, to communicate with the IBM PC. AppleTalk set a standard for efficient, low-cost computer networks.

The first networking with AppleTalk was connecting many Macs with one LaserWriter. With this networking scheme, Apple felt that small and large businesses could cost justify the purchase of a \$7,000 printer. This logic is correct. If a business were to connect fourteen Macs to one LaserWriter, the cost per work station would only be \$500. Considering the cost of other computerized work stations sharing a single, comparably priced peripheral, AppleTalk is very cost effective. Today, the LaserWriter remains the hub of the Macintosh office. It has created a cottage industry that makes high quality laser printing available to everyone. In-house corporate publishing is booming. Many businesses are finding that they can pay for the cost of a LaserWriter with the money they save by not having to typeset their in-house newsletter and magazines.

At this point the AppleTalk network is just hardware. The Macintosh requires software to take full advantage of the many features of AppleTalk. There are several products and programs that have been developed by third party developers. These products are designed to create file transfers between Macs, and between Macs and IBMs. There is only one specific software package for AppleTalk. This software is the LaserWriter printer driver. It allows access to the LaserWriter via the AppleTalk network. When the LaserWriter printer drivers are installed on a startup

disk, it uses AppleTalk network software. The installation disk places the proper communications information to allow us to send our documents to the LaserWriter.

### Getting Information Across

One third party AppleTalk software product being developed is Mail Center by Videx. Mail Center allows Mac users on AppleTalk to send any Macintosh file to another Macintosh and provides an Electronic mail system for the office. E-mail can be a very valuable component of any busy office.

With Mail Center, someone working on a MacDraw document could send that document to a person in the office who is responsible for creating the final report. Along with the MacDraw document, the user can send a message about the document. He can also send a message to anyone else in the office. Mail Center goes a step further with its E-mail and file transfer capabilities. Videx has worked in conjunction with Tangent Technologies of Norcross, GA, to create a file transfer and E-mail program for the IBM-PC/AT/XT. This program works in conjunction with Tangent's PC MacBridge. PC MacBridge is an add-on board for the IBM. The board allows the user to connect their IBM via the AppleTalk network to the LaserWriter and Macintosh computers. With the software developed by Tangent Technologies and Videx's Mail Center, file transfer and E-mail between the Mac and the IBM is very easy and reliable. PC MacBridge is the first AppleTalk network application to actually make it to dealers's shelves. On top of being first, PC MacBridge works!

Another E-mail and file transfer for the Macintosh program comes from England. TopExpress has created a program called Expressmail. Like Mail Center, Expressmail provides Mac users the ability to send E-mail and files to other Macs via AppleTalk. Tangent Technologies is going to insure PC MacBridge will be able to work with either Mail Center or Expressmail.

### More Toys

Centram Systems West, Inc. in California, has announced a product for the Macintosh office. Similar to PC MacBridge, Centram is calling their system TOPS which stands for Transcendental Operating System. Like PC MacBridge, TOPS will have an add-on card for the IBM. Its primary features include software that will transfer files and convert any hard disk drive on the network into a file server. This means that anyone on the network could have access to information on any hard disk or floppy disk drive connected to the network. This includes an IBM-XT/AT. Hopefully, TOPS will be available when you read this.

File servers are another aspect of networking. What follows is a brief and sim-

plistic explanation of the difference between a file server and a disk server.

- A file server allows more than one person to access the same volume on a hard disk. A disk server doesn't.

- A file server will allow up to 2,000 files per volume. A disk server with the current Finder will allow about 500 files.

- A file server lets you have 32 volumes open at the same time, on either a 128K or a 512K Mac. A disk server generally limits you to one volume open on a 128K Mac and 4 volumes on a 512K.

- A file server does not limit the size of your volumes. You could use just one volume and still fill an entire disk. A disk server may limit the size of each volume.

There are the programs that have networking potential, such as MacLink by Data Viz, Inc.. MacLink assists in connecting the Macintosh to mainframe computer systems. This would be a very valuable program to those businesses that require the downloading of information from their mainframe computer. With MacLink the Macintosh can become one of the most powerful terminals that anyone would need. See the November issue of MACazine.

MacCharlie from Dayna Communications is another alternative for the Macintosh office. MacCharlie consists of two IBM compatible disk drives, 640K of RAM, a keyboard enhancement that includes IBM specialized function and control keys, MS-DOS for the Macintosh, an IBM CPU, and a patented coprocessor developed by Pheonix Systems. MacCharlie connects directly to the Macintosh and allows IBM software to run on the Mac. With other features such as file transfer from Mac to IBM and IBM to Mac, MacCharlie has the potential to become a staple in offices that already have a large investment in MS-DOS software or want to utilize the Mac's versatility. With MacCharlie, Macintosh owners can now become far more productive by having the best of both worlds. MacCharlie should also have the potential to connect to AppleTalk. With the addition of the IBM expansion box or Dayna's own expansion box, additional network cards could be added that connect MacCharlie to the AppleTalk network. Again, read the November issue.

### People Talk

Many of the products discussed here are in the development stage and not yet released. Other products were scrapped altogether when Apple axed The Macintosh Office. New products are being announced all the time. Who knows what the future will bring. There is some news that holds hope for users interested in networking their Macs. Tangent Technologies has started a group called the AppleTalk Developers



Association. The idea for ATDA began just after MacWorld Expo in Boston. ATDA intends to set standards that will make it easier for new developers to produce useful, working products for the AppleTalk network. ATDA membership is growing. In fact, Apple Computer joined ATDA as an equal member. This means that Apple is willing to be just as much a part of the AppleTalk development process as some of the little guys.

With the rapid pace of technology, predicting the future is a fool-hardy venture. New products are being introduced every day. Some make it to market, others do not. With over 500,000 Macs on the market, the future for the Macintosh office concept looks bright. Some new innovations will be sure to propel the Macintosh into the business community. Whether other products will take advantage of the new technology remains to be seen. The very philosophy of the Macintosh promotes creative alternatives.

One of these alternatives is based upon the DynaBook theories of Buckminster Fuller. Fuller's ideas for the DynaBook were expanded by Alan Kay. Alan Kay, now an Apple Fellow, was head of the Xerox Palo Alto Research group which designed the Xerox Star computer, the forerunner of the Macintosh. Kay believes the metaphor of

the computer as a tool is outdated and should be replaced with the metaphor of the computer as media. The DynaBook was envisioned as a small computer, about the size of a stenographer's notebook, but housing the power of a mainframe. It would be so easy to use that children would carry it to school instead of traditional books.

The DynaBook would quickly and easily plug into data information systems all over the world. It would provide instant access to any types or amounts of information. Some pundits see the Macintosh as the first step toward the DynaBook. According to some rumors, Apple might announce what some are calling a Flat Mac, a Macintosh the size of the Radio Shack Model 100/200. Again, this is just a rumor, but it would be an ideal addition to the Macintosh office.

### Christmas Future

More futuristic products include an RFMac, or Radio Frequency Macintosh. The RFMac would incorporate the flat Mac or DynaBook design with existing cellular telecommunications technology. It would make remote access to host computers almost instantaneous because it would not require the wiring needed for a standard telecommunication connection.

Improvements in microwave communications technology could spur development of a RFMac as early as next spring. Maybe those rumors about Apple and AT&T have some substance to them. With an RFMac, the Macintosh office could be the office of the future. We could have a Macintosh connected to a database, access information, talk to the boss on the phone with voice/data systems, and make notes on a sales prospect at the same time. Look for improvements in CMOS (an electric charge generating chip) chip technology to aid in the development of these Voice/Data systems.

Several advanced technology projects on Apple University Consortium (AUC) campuses are very nearing fruition. Project Quest at The University of Texas at Austin, TX, and scientific research work at Reed College in Portland, OR are interesting technological opportunities for Apple. At UT, people are working on artificial intelligence and 3M machines. 3M machines are computers that operate with 1MB of RAM, 1MB of disk storage, and a microprocessor that manipulates 1MB of data. Reed College, an original member of the AUC, has developed an Intelligent Network for Energy Audit which uses the Macintosh to aid in the monitoring of the energy output of a building. At Reed, uni-

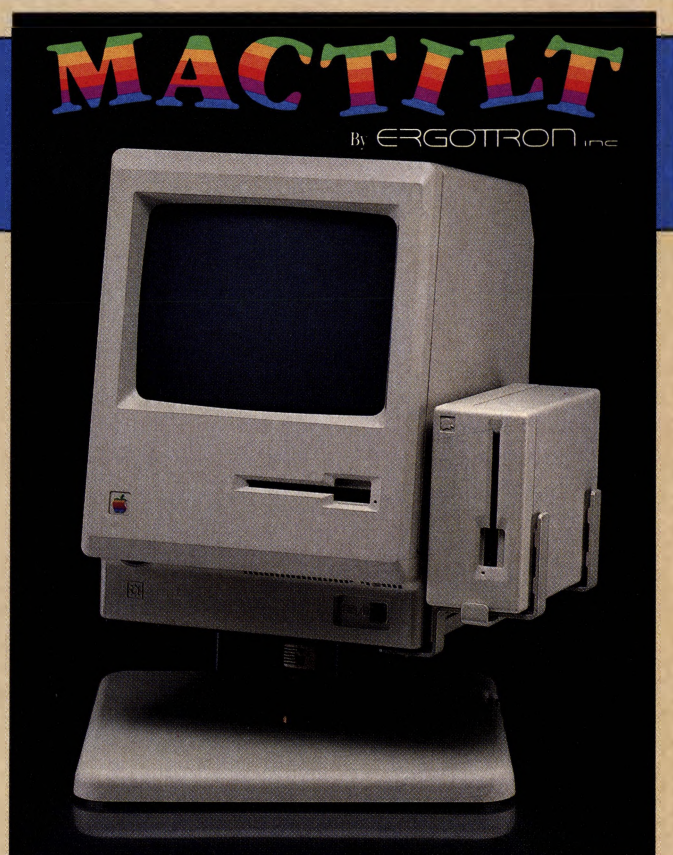
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versity buildings are monitored and controlled for energy cost savings. Imagine setting your thermostat with your Macintosh. An office of the future will be able to regulate its energy expenses by simply pointing and clicking.

John Naisbitt points out in his book *MegaTrends*, that we have moved from an industrial based society to an information based society. If he is right, everyone will need access to more information in the future. Truck drivers, like airplane pilots, will get current weather conditions. They will use geographic information systems to plan the optimum route. The large trucks will have on-board computers which set speed for the best fuel economy. Will the truck driver of the future need to go back to school to learn about computers? Enter the Macintosh, or DynaBook. With the standard user interface, truck drivers, busy executives, magazine writers, school children, everyone will use computers the same way we have used all technology. We will create the future with it. With products like the Macintosh and creative minds like Alan Kay's, everything is possible. Put in our order for the DynaBook. Sign us up for the future.

### Get Stuff Out

**A**h, to have the perfect output device for the Mac! Dreaming even further, get Apple to produce the ideal output device for the Mac. What's an output device? Well, anything that produces a static image of what you see on screen qualifies. It includes a multitude of printers, plotters, video displays, and replica devices.

During the second week in September Apple announced production of the new ImageWriter II. It is a versatile, all-purpose impact dot matrix printer that features a print head that shifts horizontally and vertically to accommodate a single multi-color ribbon. Ribbons are available with as many as seven different colors. User selected print modes are 250 cps (characters per second) in draft mode, 180 cps in standard mode, and 40 cps in high quality mode. It will have an Appletalk interface and an optional Cut Sheet Feeder. Extra memory for the ImageWriter II's print buffer is available with an optional 32K expansion card.

Every Macintosh owner knows that the Macintosh's ROM configuration and print routines accommodated color capabilities, but there was no convenient device of printing color images. ColorPrint, a ribbon product for the ImageWriter that automated the roll-back registration problem, was a pain to change and time consuming to use. The ImageWriter II changes this situation. It insures that software updates and new software products will be designed to add color to printer output. The ImageWriter II will produce color graphics,

business charts, and the inevitable memo disguised as a spring bouquet.

### Color Me Mac

Beck Tech of Berkeley, CA has developed a device called the Chromatron that outputs the Macintosh's video display into a color monitor. The Mac's high resolution screen is produced by pixels that are either turned on (white) or off (black). Color video display is achieved by combining two or more colored pixels into one point. Every pixel on the screen is turned on to display either red, green, or blue. The combination of colored pixels at one point is what creates different colors. Because more pixels are used to create a single point, almost all color monitors have significantly low resolutions. However, converting your Mac graphics into 16 color video would make for a snazzy presentation at your next board meeting!

The Mac's screen configuration has challenged developers of digitizers and graphics applications. Alan Kay pointed out in a seminar delivered at UT last September that although this configuration makes it difficult to show greys on screen, it is ideal for LCD (liquid crystal digital) screens. Apple quietly purchased flat screen technology from a Japanese company last September. A fat, flat Mac could be a DynaBook prototype. For the Mac's video display, we would like to see a bigger screen, but still blue.

Technology to produce color LaserWriter is available, but not practical. Ricoh, a major copier manufacturer, will have a color copier available next year in the \$15-20,000 range. To understand the problems involved in the laser printing process, we must first examine the Canon engine that is the heart of the Apple LaserWriter. In today's copiers, the reflection of light off of the original forms a photoconductive image on the copier drum. Special material on the drum contains an invisible collection of negative and positively charged ions which mimic the image.

After this image has been formed, the drum passes through a toner chamber which has a particular charge, or contains magnetically charged materials mixed with toner. Where an opposite charge lies latent on the drum, the toner attaches itself to these areas creating the toner image on the drum. In turn, the drum comes in contact with paper and the image is transferred to paper. Next, the paper passes through a fuser device that permanently bonds the image to the paper. In the laserprinting process, light from a laser, rather than reflected light, draws an image on the drum. A latent image is formed and picked up through the toner bin and transferred to paper. The image is bonded to the paper before exiting the LaserWriter.

In a color LaserWriter, this same process would have to occur at least three times

(once for each of the three primary colors) to achieve a multi-colored image. A color hard copy would be approximately three times as expensive as black and white copy, and technological breakdown would be three times more likely. One practical possibility is the creation of the total color image on the drum before transfer to paper, using different colors of toner with various states of charge/discharge that would be attracted to only a certain amount of charge on the drum. This approach makes more sense in terms of transferring color graphics files to the LaserWriter. The size of files would, however, increase and even the LaserWriter's 1.5MB of RAM would be too small.

No doubt a color LaserWriter will grind out color copy with the same speed and clarity as the LaserWriter. But at a very high price. What is possible for Macintosh users is an affordable LaserWriter. High on our wish list is a lowcost LaserWriter. It would not be as fast or versatile as the LaserWriter but would cost under \$2000. Hewlett-Packard, Corona, and Canon are producing less specialized laser printers with about 95% of the capabilities of the Apple LaserWriter for under \$4000. The Japanese company NEC introduced a competitive non-impact printer this fall. The NEC printer performs like a LaserWriter but uses a light-emitting diode array rather than a semiconductor laser. It runs at eight sheets a minute with a heavy duty cycle of 5000-8000 pages per month. It will be smaller and cheaper than the LaserWriter, yet its performance will be upgradable and Postscript compatible.

### A Gift

It would have been impossible to compile this wish list for the Macintosh a year ago. Nineteen eighty-five brought many wonderful products to the Macintosh. It brought hundreds of thousands of Macs to users. It introduced the Macintosh Office and laid off thousands of Apple employees. It started some careers and ended others. It created dreams and brought disappointments.

Christmas is a time for wishes and dreams. It is also a time for individual gift giving. The MACazine went into full four-color production a year ago. The Macintosh gave this magazine and the people who work for it an opportunity to do something we had never done. That's a gift we appreciate. We hope that in the coming year the Macintosh will give its gifts to you, and that you too will realize your dreams.

●—Michael Holloway, Stephen Bennett,  
Steven Schwartz, Mark Veljkov,  
with Barbara J. Chan

# The Granny Smith Connection

Enter the Granny Smith Connection, a solution to a problem that has plagued Macintosh owners from the beginning. This is the problem of printer compatibility. It was developed by the Z.A.P. Logic, Corp. Z.A.P. stands for *zeta-ma alacre prudens*, which is Latin for "solving a problem by the process of scientific inquiry." The GSC is a parallel printer adaptor for the Mac. It opens doors for those people who have put off buying a Mac because of printer incompatibility.

## How it Works

One GSC fits all Centronics style parallel printers. On top of this, all of the printer drivers are located on one disk. The GSC comes in two parts: an adaptor and a disk. The adaptor has a standard Macintosh nine pin plug on one end, an adaptor box in the middle and a standard Centronics connection at the other end. The nine pin plug fits into the modem or printer port on the Mac and the Centronics end fits into your printer. The disk has all of the drivers and an install program on it.

Setup and operation is easy with the GSC. Plug your parallel printer into your printer and Macintosh. Next, insert your startup disk in the internal drive. Now place the GSC in the external drive. If you are a one disk drive user, eject your startup disk and get ready for some swaps. The swapping won't be too bad because the printer drivers only have to be installed once. Now open up the disk, click Printer Install, select the name of the printer that you have and the Connection does the rest. With the new system from Apple there is a new feature under the Apple menu: Choose Printer. With this option you can have more than one printer driver on your startup disk. A dot matrix printer can be hooked to your printer port and a letter quality parallel printer could be hooked to your modem port. All you have to do is select Choose Printer from the Apple menu, select the name of the printer you want to use and then select the port to which it is plugged.

If you want to print to the LaserWriter there are some minor drawbacks. The AppleTalk connector, which is required for printing to the LaserWriter, must be con-

nected to the printer port. This will leave only the modem port for your additional printer. If this is no problem then the Granny Smith Connection gives you the best of both worlds.

The Granny Smith Connection performs as expected. The first version of the software contained the following printer drivers: Apple DMP, Brother HR 15/25/35, C.Itoh F-10, Comrex CR 2/3 Diablo 630, Epson FX/MX/RX, Epson compatibles, IBM Quietwriter, IBM Wheelwriter, Juki i6300, Olympia RO, Panasonic, Qume, and Star Gemini.

The GSC supports Macintosh graphics on printers capable of printing graphics. The only major flaw was that the GSC printed at 60 dots per inch (DPI) instead of the 80 DPI like the ImageWriter. The newest version of the software not only fixes the DPI problem but adds the following printers to its list: IBM ProPrinter, HP Laserjet, HP Inkjet, IBM Color printer and more.

We tested all of the printers and experienced no major difficulties. Some minor problems did arise when printing on some of the daisy wheel printers. It seems that you must write with, or change your text to 9 point Monaco. This will allow your text to be formatted correctly when it is printed. This was the only flaw that I was able to find with the program.

Printing with a strange printer is just the same as with the ImageWriter. You select print from the File menu, then you will have a dialog box that looks like the regular ImageWriter dialog box. There are some minor variations, but no surprises. Once you have selected print, the Mac acts as it usually does when printing.

The documentation is a bit sketchy, but then again there is nothing complicated about the Granny Smith Connection. Z.A.P. should have included some information about which font is the best to use with which printer.

## Support

Z.A.P. Logic provides free software updates to all registered owners. They are also willing to provide free phone technical support. However, they do not have a toll-free number and the company is in Toron-

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# There Are TWO Reasons To Use a Modem

## No. 1--To Reach The Mac Underground™

Mac Underground is a nation-wide network of "SafeHouses" that supply serious Mac users with outrageous industry intelligence and state-of-the-art equipment. You reach the Underground using a 300, 1200 or 2400 baud modem.

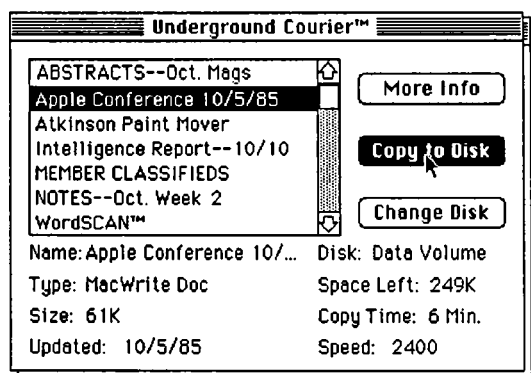
The content of their daily and weekly reports--coupled with the low cost of their hardware--has made dealers and suppliers take frequent trips to their restrooms.



"Mac Underground is a unique organization, founded and run by honest, friendly, straight-ahead people. Highly recommended"  
Doug Clapp and Pat Ryall from *The Complete Macintosh Sourcebook*.

"The Mac Underground is a sociological footnote to the technological revolution."--Marc Halberstadt, Publicist with *Antic Magazine*.

## No. 2--To Use Underground Courier™ Software



Underground members use Courier to make modem contact with a SafeHouse.

Once inside a SafeHouse, members can copy choice public domain programs, in-house software, weekly and daily intelligence reports all over the phone.

Courier also represents a landmark in telecommunications. It requires no typing or prior knowledge of teletype jargon--just pointing and clicking!

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"This could become THE standard in telecommunications."  
Mel Beckman, Senior Programmer at Pace Financial--an IBM VAR.

## A \$39.95 One-Year Membership Includes:

- Courier software that lets you copy Underground files over the phone!
  - Daily Intelligence Reports covering industry break-throughs
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- No "online" charges (other than the cost of an AT&T call)!
- Access to fine new equipment at dealer cost plus 10%!

## A Message from the Director

If you've ever read my *On the Road* column in MACazine--and enjoyed it--I would encourage you to join the Mac Underground. In our Underground publications I have virtually NO editorial restrictions! The result? You get material I could never put in the Mac mags.

When you call us (or write) we'll give you the phone number of the SafeHouse nearest you. We'll also send you a free copy of Underground Dossier! See you online?

MAC UNDERGROUND HEADQUARTERS  
607 North Court Street, Fairfield, IA 52556  
Voice (515) 472-9613 10AM to 4PM Central



Jerry Daniels, Director of Mac Underground-USA

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to, Canada. But a long distance phone call is certainly cheaper than paying for technical support. They also indicated that if you have a strange printer type that is not on their disk, let them know. One of the drivers may be compatible with your printer.

## Conclusion

The Granny Smith Connection may be one of the best solutions for dealers trying to sell more Macs and for users who want to use their parallel printer. Unlike other parallel printer adaptors that work with only one, or a few printers, the Granny Smith Connection works with many printers. This alone makes it worth the price. It is also simple and easy to use. No surprises! If you have a parallel printer gathering dust, clean it off and check out the Granny Smith Connection, it just may be what you are looking for.

Granny Smith Connection  
Z.A.P. Logic, Corp  
5647 Yonge St., Suite 208  
Toronto, Canada M2M 4E9  
(416) 225-8815  
retail price: \$114.90

—Mark Veljkov

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copy media fee ... \$8.50/disk.

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**A-B Serial Port Switch** ... \$35.

**15 MB Davong Harddisk** ... \$1300.

**InfotekApple Talk Network box & cable;**

works up to 6000 ft! ... \$49.

**CALL or write for our free catalog of Mac, Amiga, Atari 520ST Comp. and systems.**

# VCS

## The Ergonomics of Change: A View From the Top

I saw myself in that advertisement—not in control of a minor computer enhancement, but in the cockpit of technology. No longer would I have to take my hands off the controls as I cruised into and out of applications, strafing spreadsheets, buzzing bulletin boards, flattatting Filevision, hedgehopping Helix, running switcher sorties, while I streaked through the MACstratosphere.

Then I got my VCS fighter—a small box sitting atop the Mac, connected to a headset via a phone cord, with an accompanying dual switch button pad which attached securely to the keyboard and I found out that piloting this bird wasn't as easy as this flyboy had expected. VCS, a Video Control System from Personics is an ultrasonic transmitter/receiver combination allowing hands-off operation of the cursor. The technology that moves the mouse operates at the speed of sound (40 kilohertz—above audible range of people and animals) light years faster than the mechanical movement of the mouse. But does this increase in speed result in faster operation of the Mac; is it accurate; is it fun?

Most of us have been provided with hands in order to choose, sort, and construct the world around us. Our minds supplied us with mathematics and (computer) technology to take over some of these tasks. The Macintosh freed our minds of much of the cryptogrammic computer command labor and put it back into our hands. Now VCS frees our hands by putting these functions on our head.

Initially I found out that my head was not coordinated enough to control the mouse. After a couple of hours of word processing I had succeeded more in flipping uncontrollably up, down, and around applications and into and out of menus (all the screen edge functions) than actually processing words. After a day I was operating MS Word with the same degree of facility as I could using the mouse, but had spent so much time having to concentrate on what I was doing that I was missing the greater portion of the TV programs babbling away in the corner of the room. After three days I found myself automatically donning the headset and operating applications faster and more facilely than rodently.

is within finger's reach. The mouse needs to be cleaned and will eventually wear out. VCS doesn't need cleaning and won't wear out. The mouse is fast—VCS is faster and uses less power. The mouse is accurate—a bit of practice and VCS is just as accurate. To summarize: VCS is useful where accurate cursor placement (e.g., word processing) is critical. Accurate movement (e.g., graphics) is another question.

Mac mouseketeers have developed certain mouse habits—the VCS user will

### Mouse or VCS?

VCS requires some retraining (didn't the mouse once?). Whereas the mouse operated cursor can be started toward its destination before actually focusing on that spot, the VCS cursor has to be "sighted" before it is moved. This is the trick to establishing a sensible relationship between the operator's eye/head movement and cursor control. Other comparisons: The mouse has to be found and needs room in which to operate—the VCS is always ready and activated and the keypad

## Tired of Trolls? Weary of Wizards?

# Real Life

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**Go Take Drop Examine Act Listen Read Think Misc**

North  
South  
East  
West  
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Right  
Forward  
Back  
Up  
Down  
Across

You are in the middle of a very busy street c  
Up and down the street are various buildings  
Directly across the street, eastward, is an all  
The way out - behind you - is called Death.

Here, you see:

An empty beer bottle with most of the label missing.

It is Monday.  
You are wearing filthy rags.

**EASY TO PLAY**  
Dynamic menus  
let you know what you  
can and cannot do.

**COMPLETE**  
Maps are included,  
and clues are as close  
as the keyboard.

**MEANINGFUL**  
Real-life situations,  
real-life decisions -  
real-life consequences.

Real Life is not just another fantasy, not just another game.  
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*Due to the delicate nature of some Real Life issues, this product is not recommended for children under 13.*



automatically develop a set of habits particular to this technology. For example, positioning the cursor requires an interesting coordination of the finger manning the button pad. Whereas most of us have learned to press a button when we've homed in on our target, much of the VCS operation revolves around the timely re-

leasing of a button. As a mouse user I started capturing groups of words by click/sliding through text. Later I revised that approach when I found that shift clicking was more efficient. With the VCS I am shift-double-clicking to quickly capture that last word in the block.

## VCS Technology Applications

Obviously there are some very real situations where the VCS unit is invaluable. Disadvantaged people are the obvious case in point. Personics is already at work developing a software accessory that will place on the screen a keyboard (a la the Keycaps DA) which will pipeline characters into underlying applications. They have also designed the headset so that it can accommodate a footswitch, a mouth operated (sip & puff) device for complete hands-off operation, or a microphone for speech recognition applications. Speech recognition technology, allowing the computer to recognize command oriented and limited data entry language, already exists—its only a matter of time before that technology is brought into the Mac arena and merged with the VCS.

VCS technology will allow the computer to function in "hand-dirty" or "hand-busy" work situations. VCS hands software designers the ability to design computer applications that allow unique operational approaches in various environments including the medical, military, and industrial process control fields. I wonder, might it shine as a teaching device? Will it make the computer a more attractive tool for children, artists, animals, or people of other cultures? Will it restructure the physical environment around the computer?

There are some applications where VCS seems an unreasonable alternative. I wouldn't recommend it for drawing or for games that require fast, accurate, or complicated cursor movement. I say this with some hesitation because I realize that five years ago, few would've recommended sliding around a box with a switch on top and a wire tail! Remember the time when white collar workers wouldn't approach a keyboard?

My opinions are the result of my experience, capabilities, and imagination. I think that my abilities reflect the talents of Mac users on the whole but it is entirely possible that the experience of others will be different. I know that some people have already been experimenting with removing the three transducers from the headphone and remounting them on other parts of the body. Will it be long before they're mounted on other animate beings and even machines?

—Joost Romeu

Joost is a graphics artist and writer.

Form <b>1040</b>		Department of the Treasury — Internal Revenue Service		<b>1985</b>	
U.S. Individual Income Tax Return		TaxEase		Spreadsheet Templates	
For the year January 1 - December 31, 1985					
<b>Macintosh Election</b>		Do you want to make this years taxes much easier to figure? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
		If so, do you want to use your Macintosh? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
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5 <input checked="" type="checkbox"/>		Schedule C,F — Profit or (Loss) From Business or Profession, or Farm			
6 <input checked="" type="checkbox"/>		Form 4562 — Depreciation			
7 <input checked="" type="checkbox"/>		Form 3468 — Investment Credit			
8 <input checked="" type="checkbox"/>		Schedule D — Capital Gains and Losses			
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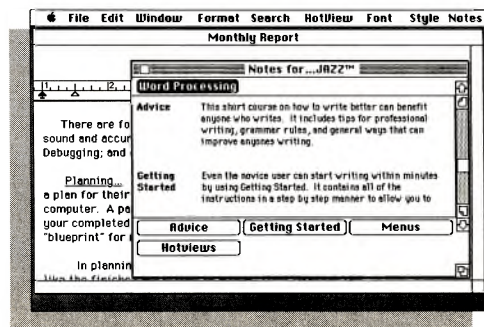
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<b>A</b>		<b>B</b>	<b>C</b>
<b>1</b>	<b>Manufacturer</b>	<b>Name of Unit</b>	<b>Type of Storage</b>
<b>2</b>	Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014	Hard Disk 20 (a)	Hard disk
<b>3</b>	Corvus Systems, Inc., 2100 Corvus Drive, San Jose, CA 95124	OmniDrive	Hard disk
<b>4</b>		Omni Drive	Hard disk
<b>5</b>		OmniDrive	Hard disk
<b>6</b>		OmniDrive	Hard disk
<b>7</b>		OmniDrive	Hard disk
<b>8</b>	General Computer Company, 215 First St., Cambridge, MA 02142	HyperDrive	Hard disk
<b>9</b>		HyperDrive 20	Hard disk
<b>10</b>	Iomega Corporation, 1821 West 4000 South, Roy, Utah 84067	Bernoulli Box	Removable cartridge disk
<b>11</b>	Micro-Design, 6301 Manchaca Road, Austin, TX 78745	PRO-10FM	Hard disk
<b>12</b>		PRO-20FM	Hard disk
<b>13</b>		PRO-30FM	Hard disk
<b>14</b>		SQ-510M	Hard disk and removable cartridge disk
<b>15</b>		SQ-520M	Hard disk and removable cartridge disk
<b>16</b>		SQ-530M	Hard disk and removable cartridge disk
<b>17</b>	Paradise Systems, 217 East Grand Ave., San Francisco, CA 94080	Mac-10	Hard disk
<b>18</b>	PCPC, 6204 Benjamin Road, Tampa, FL 33614	Macbottom	Hard disk
<b>19</b>	Quark Inc., 2525 West Evans, Suite 220, Denver, CO 80219	QC10 (b)	Hard disk
<b>20</b>		QC20 (b)	Hard disk
<b>21</b>	Sunol Systems, P.O. Box 1777, 1187 Quarry Lane, Pleasanton, CA 94566	SSD-10	Hard disk
<b>22</b>		SSD-16	Hard disk
<b>23</b>		SSD-25	Hard disk
<b>24</b>		SSD-45	Hard disk
<b>25</b>		SSD-70	Hard disk
<b>26</b>		SSD-92	Hard disk
<b>27</b>		SSD-10/T20	Hard disk and tape backup
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<b>30</b>		SSD-45/T20	Hard disk and tape backup
<b>31</b>		SSD-70/T20	Hard disk and tape backup
<b>32</b>		SSD-92/T20	Hard disk and tape backup
<b>33</b>	Tecmar, Inc., 6225 Cochran Road, Solon, OH 44139	MacDrive 10	Hard disk
<b>34</b>		MacDrive 5R	Removable cartridge disk
<b>35</b>		MacDrive 5R + 5R	Dual removable cartridge disks
<b>36</b>		MacDrive 10 + 5R	Hard disk and removable cartridge disk
<b>37</b>	Western Automation Laboratories, Inc., 1700 N. 55th St., Boulder, CO 80301	DASCH 5	External RAM
<b>38</b>		DASCH 10	External RAM
<b>39</b>		DASCH 20	External RAM

<sup>a</sup>Includes special Finder, updated desk accessories, and print driver for Imagewriter II.

<sup>b</sup>Also compatible with Apple IIe, IIc, and III.

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<sup>e</sup>20MB hard disk and 5MB cartridge.

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<sup>i</sup>25MB hard disk and 26MB tape cartridge (\$59.95 each).



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21	Modem port	✓	(p)	✓	✓	2,795	133
45	Modem port	✓	(p)	✓	✓	4,995	111
126	Modem port	✓	(p)	✓	✓	8,995	71
10	Internal	✓	✓	✓	✓ (r)	2,195	220
20	Internal	✓	✓	✓	✓ (r)	2,795	140
5 (c)	Modem or printer port	✓	✓	(p)		1,995	399
10	Printer port	✓	✓	✓	✓	2,295	230
20	Printer port	✓	✓	✓	✓	2,995	150
30	Printer port	✓	✓	✓	✓	3,695	123
15 (d)	Printer port	✓	✓	✓	✓	4,195	280
25 (e)	Printer port	✓	✓	✓	✓	4,795	192
38 (f)	Printer port	✓	✓	✓	✓	5,395	142
10	Modem or printer port	✓	✓			1,495	150
10	Modem or printer port	✓	✓	✓		1,595	160
10	External drive port	✓		(p)	✓	1,295	130
20	External drive port	✓		(p)	✓	1,795	90
10	Printer port	✓				1,995	200
16	Printer port	✓				2,495	156
25	Printer port	✓				2,995	120
44.5	Printer port	✓				4,595	103
68		✓				5,295	78
92	Printer port	✓				6,695	73
36 (g)	Printer port	✓				3,345	93
42 (h)	Printer port	✓				3,845	92
51 (i)	Printer port	✓				4,345	85
70.5 (j)	Printer port	✓				5,945	84
94 (k)	Printer port	✓				6,645	71
118 (l)	Printer port	✓				8,045	68
10	Printer port	✓	✓	✓		1,995	200
5	Printer port	✓	✓	✓		1,995	399
10 (m)	Printer port	✓	✓	✓		3,290	329
15 (n)	Printer port	✓	✓	✓		3,290	219
0.5	Modem or printer port		✓	✓ (q)		495	990
1	Modem or printer port		✓	✓ (q)		795	795
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<sup>1</sup>44.5MB hard disk and 26MB tape cartridge (\$59.95 each).

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<sup>5</sup>10MB fixed and 5MB removable cartridge disk (\$120 each).

<sup>6</sup>Uses a hierarchical file structure that avoids partitioning.

<sup>7</sup>Under development.

<sup>8</sup>Automatic backup based on time increments (under development).

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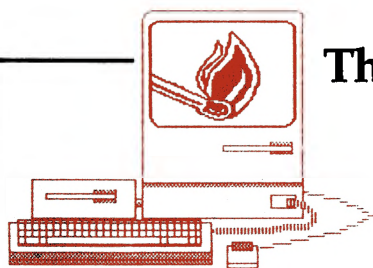
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## The Active Window

Several things struck me while I was at the Boston MacWorld Expo. We've been hearing that there were many programs available for the Macintosh, but it was the first time that I felt that there was a lot of software. And more companies are entering the Macintosh marketplace. It's only going to get better for us consumers.

Competition for shelf space in the stores is heating up. This means that programs have to be better than ever to convince us consumers to buy; we are becoming more discriminating.

The second wave of software is upon us. At first it made sense for developers to select projects that could be done in a relatively short time. That was when Mac owners were hungry for software and would buy almost anything.

There were at least three ways to accomplish this. One, translate some program that already existed on another computer—this is called "porting" a program over. Two, choose a very small scale program, which doesn't do much and could be done quickly. Three, rush it and produce junk. We've seen all three methods.

Translations included the PFS stuff, DB Master, Lode Runner, Sargon, Transylvania and the Infocom text games. Small scale programs included MacVegas (one of my old favorites and it was done well), Mac the Knife clip art, and T/Maker's Click Art. Habadex was the epitome of junk. Filevision stood out because it had none of these characteristics.

But now, enough time has passed that we are seeing the fruition of long term projects like Excel, Jazz, Business Filevision, OverVUE 2.0 and others. The marketplace dictates this. Software for the Mac will continue to improve. Any developer who doesn't produce packages for the discerning user will soon get lost in the pack.

This becomes apparent in the games area. First, there were the likes of Mouse Stampede, Frogger, MacCheckers and MacJack. All quite forgettable. Now we see Dj Vu, Enchanted Scepters, Strategic Conquest, and Fokker Triplane, all developed specifically for the Mac.

Several games which were translated from other computers have been rendered significantly better by utilizing the power and graphics of the Mac, such as Ultima III, Pinball Construction Set (good sounds, reportedly digitized stuff done by Steve

Capps), and Gato.

Probably the most dramatic example is in comparing the strategy games Entrepreneur and Balance of Power. Entrepreneur is not very realistic and has little depth. Balance of Power is very deep and you actually learn some history. It has set a very high standard for other strategy games to match.

As more titles appear, competitive pressure builds to produce even better software. I saw this happen over a five year period with the Apple II. Again, games were the showcase. It is almost incredible to me how advanced games have become on that computer, considering how much processor power and memory it has.

I get excited just thinking about the fact that the Mac is so much more powerful than the Apple II and that it is still early in its life cycle. Just as developers for the Apple II became wizards at getting every ounce of computing power they could out of that machine, so will Mac developers. Mac programmers are only now mastering the little beast. Soon they will begin pushing it to its limits and giving us software that will dazzle us!

### Using More Memory

We find ourselves using various programs to accomplish different tasks, so the Switcher program becomes more significant. Often we want to jump between the programs. The Switcher is great, but on a 512K Mac we immediately run into memory limitations.

The most significant thing happening right now in the Mac marketplace is the proliferation of memory upgrades to more than 512K. One of the Macs in the office has had the 2MB Monster Mac upgrade from Levco for some time. I've had 2MBs in my Mac XL for several months and I couldn't live without them.

Micro Conversions, Inc. out of Texas is offering a 4MB upgrade. Holy smokes, this is getting serious. The idea of having that much memory makes me drool. Believe it or not, there are many times when I wish I had more than 2 megs. Why? Because I always work with Switcher.

Here's how I set up my system and why I could benefit from more memory. I'm still using my XL at work (until I get the 20MB hard drive from Apple). Every single day I do several one page letters, typically answering people's inquiries. Almost every day I talk to new contacts whose names have to go into one of the database files.

I frequently make flyers and brochures and have them printed on a LaserWriter. I also receive files over the phone line.

Each morning I fire up the XL and double click on one of three Switcher load

sets, depending on my agenda for that day. The one I use most is configured like this: MacWrite 4.5—200K, Microsoft Word—512K, OverVUE 2.0—512K, MacTerminal—200K and the Finder—200K.

With this setup, I can take care of correspondence, switch to OverVUE when I get a new contact on the phone, or switch to MacTerminal when I get a call saying it's time for a file transfer. Occasionally I'll have to run another program. With 2 MBs, there's room to do all this.

For example, if I create a text data file with OverVUE (to pass along to someone who uses a different data base program), I might use the MDS Editor program to open it up and make sure it turned out right (you don't think I'd be foolish enough to open a 100K or even 200K text file with MacWrite—I'd grow a beard while it's loading). Or, I might occasionally run MacTools to check a disk. When finished, I'll Quit from the program to free up the memory again.

When I know that I'm going to have to create a flyer, brochure or sign, I load up like this: MacWrite 4.5—200K, MacPaint—179K, Paint Cutter—344K, MacDraft—512K, Banner 2.0—128K and Finder—200K. Everything I need to work with graphics is there. I usually end up plugging the graphics into MacWrite to print on a LaserWriter and take advantage of the laser fonts (I can't wait to get ahold of the additional laser fonts that Casady Company has been working on).

When it's time to work on the budget, the load set contains Excel—512K, Microsoft Word—512K, OverVUE—512K and Finder—200K. I should note that without a hard disk, trying to work like this may cause an unsatisfactory amount of disk swapping. One possibility for working with floppies is to create a good size RAMdisk, put the System, Finder and some of the applications in there, make it the startup, and then run Switcher and have the rest of the applications be loaded from floppy.

Now we see why it could be nice to have even MORE memory, like 4MBs. Regardless of whether you have a hard disk or not, at the beginning of the day you could create a giant RAMDisk, load everything into it, run Switcher from the RAMDisk, load up everything you need to work with for the day, and get down to some serious, efficient work!

### Switcher Tips

Here are a few things I've learned the hard way about Switcher. First, it is helpful to make the Finder one of the applications that is loaded. An example of when you might need to go to the Finder is if you want to copy a file from one disk to

another and then go back to your work.

If you do load up the Finder, eject disks from the Finder, not within the application or you can get hung up and have to restart. Once I opened a MacPaint document that was on a friend's floppy disk, modified it, saved it, then ejected the disk with a Command-Shift-1.

My friend walked away with the disk, never to be seen again. When I switched over to the Finder, I got a message to insert that disk. Nothing would work until I put that disk back in. Obviously I was "wedged," as they say. I had to restart the Mac. Now, to eject a disk I always switch to the Finder and then just drag the icon of the disk to the Trash Can (Finder 4.1, of course).

The documentation for Switcher recommends that you set it so that it is NOT always converting the Clipboard. Believe it. A programmer told me always to convert because there were glitches otherwise. So I changed it, but one of my programs became inoperative everytime I switched out of it (a bug in the program, not Switcher) and sometimes I would wipe out a Clipboard that I actually wished would remain intact as I switched into a program. Now I suspect that the programmer based his advice on problems in very early versions of Switcher that don't exist anymore.

Let's get down to basics and find out:

### What's Hot and What's Not

**Hot:** Fluent Fonts from Casady Company. These fonts have been around for a long time but I only recently got around to checking them out. Good stuff! At the Long Beach AppleFest they announced that they are working on some LaserWriter fonts. I can't wait to see those. I'm always looking for more good fonts. I hear through the grapevine that they may acquire more fonts from outside sources.

Stay tuned to these guys. I think there is a good chance that they will establish themselves as the leaders in the font creation business.

**Not:** Crystalware. Before I found out that Arnie Katz was working on the top games for this issue, I had planned to do a roundup myself. So I acquired a bunch of them (OK, I admit it, I love computer games and this was a great way to justify buying a lot of them). I found an ad for Crystalware games. Nobody I talked to had heard of their stuff, including my local dealer who will buy anything for the Mac to try it out. They had an 800 number so I tried several times to call them.

The first time I got a message and left my name and number. No return call. I tried again the next week. The phone message said everybody had left the office (it was 1 P.M.), so I left my name and number. No call. The third time I called, the phone message said, "Some of our phone answering people are sick . . ." so I just hung up.

I gave up. These guys sure know how to run a mail-order business don't they. No wonder nobody has heard of their stuff.

**Hot:** The Mouseketeer newsletter. This is an underground, hand-made newsletter that puts the National Lampoon to shame. The satire in it will have you rolling on the ground with laughter. The first time I saw it was at the Boston Expo. That issue reported on such items as Sillycon Beach Software digitizing the entire soundtrack of Rambo in 3K and a mishap at the Levco booth where their 16 megabyte Mac, loaded with 17 copies of Jazz, reached critical mass, went white hot and was last seen heading towards China down a smoldering hole.

Each issue contains a column titled "Hot, Juicy Stuff!" that is a parody of John Dvorak's style in his InfoWorld column.

The Mouseketeer was the highlight of the Boston Expo. There is no mention of a subscription cost (you're encouraged to copy it and pass it along). If you want to write and ask for back copies, I suggest sending \$5 and a stamped, self-addressed legal size envelope to: The Mouseketeer, P.O. Box 19030, Houston, TX 77224. The editor goes by the nom de plume "Alfonso Qwerty." I love it!

**Hot:** Fokker Triplane from PBI Software. This is the third of the flight simulators available for the Mac. MacChallenger and Harrier Strike Mission are the others. Of the three, Fokker Triplane is the best. Need I say more?

**Not:** Some boxes for Mac games. I discovered that several publishers are putting out Mac software in Apple II boxes which can even be a little misleading.

Several contain color screen shots of the game (examples: The Quest, Transylvania, Dragonworld, Ultima II). Ultima II says that it is a "multi-disk game" when there is only disk in the box. That's because the same game needs more than one disk on an Apple II where the storage capacity is 126K per disk versus our 400K.

TeleCHESSE says on the box that it is FULL COLOR and that graphics can be seen on both monitors simultaneously. What are they talking about? I happen to know because I own an Apple II and I hook up a green screen monitor to the video jack and a color TV to the RF modulator simultaneously.

I guess I'm just a Mac purist at heart. I want programs that are designed to take advantage of the Mac's features and strengths. I also want packaging for Mac products to be for Mac products, not Apple II.

—Charlie Jackson

Charlie Jackson is a Contributing Editor. Send your comments via the MACazine or CompuServe 73026,3325.

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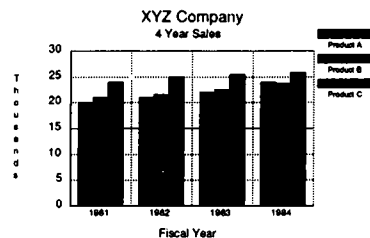
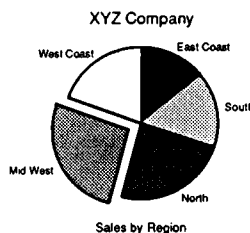
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# Playing Entrepreneur

## A Review of Educational Software

When I got this educational game I felt quite excited. Here, I thought, was an intelligent way to take out the pain of studying management techniques from books. One could playfully learn the meaning of financial statements, and how current market shares, cash flow or the modernizing of plant equipment influence profit. Well, such programs have yet to be written: Entrepreneur won't do it! It will, however, encourage a player to win a realistic looking business competition, and have a lot of fun while doing it.

Indeed, Entrepreneur is an interesting and entertaining computer game. It attempts to simulate decision making processes in the corporate offices of the software industry, e.g., how to increase market shares, lower production costs, assure adequate cash flow and, last but not least, how to increase revenue. As in the real world, the market conditions change frequently and each company is challenged by all the others. The challengers are represented by up to eight other participants and may be computer controlled. The more players are involved the more complex the game will become. This is because everybody's financial standing co-determines the market trend of the whole industry. The general trend is an important source of information for the human players throughout the game. I think that people who are turned on by plotting long-term strategies and take an interest in financial decisions will benefit the most from playing this game.

Entrepreneur is also a game which educates. This is true in the sense that it induces players to think about the value of financial statements. In real life, don't you want to invest in healthy companies for high future returns? But how do you determine the soundness of a company? By analyzing income statements, balance sheets and the like. Well, here is your

chance to practice: you will arrive at certain conclusions about the financial health of a company and take action. They will be rather experimental and painless because you only risk losing a game. You gain, however, a better feeling for the complexities of business.

### Playing the Game The Course of Action

First, the player has to become familiar with some business terms and the industry. So you look in the manual. There are several sources of information from which the financial health of a company can be deduced, for example, the financial statements. They tell how much capital was invested in research and development, plant improvement, and inventories or what the cost is for operations, depreciations etc. This is quite heavy stuff, but not all of it has to be understood before playing. According to my experience with Entrepreneur the crucial parameters are the product price, and the costs of marketing, plant improvement and R&D. Prices in conjunction with advertisement will determine market share. Investment in plant facilities will lower the cost of manufacturing and increase profits. R&D is significant in the game as in real life, but its effects will only be seen after playing for a long time.

Entrepreneur also provides a newspaper with both relevant and irrelevant data such as plain industry gossip, or a fire in your plant which reduces production. It is up to your discretion what to do with the news. There also is a Hot List which gives the competitive standing of your company in terms of market shares and profits. I found this to be the most important data in the game. It lets you compare all participating companies but does not tell why a specific result was achieved. This can only be guessed. For example, the success of a company is evident from the list but the

underlying decisions remain hidden. There is, however, one other source for clues: the General Industrial Report with data on industry-wide levels of production, inventories, and sales. This seems to be an intelligent use of feedback during the game! The contribution from all the participating players determines the general market trend. Here some information about the competitors' strategy is available—but not too much. You are left a lot of freedom for educated guesses on how to steer your company ship through difficult times.

Now you really start the game, I mean you enter the cruel business jungle. You set the number of players (from 1-9) together with the degree of difficulty (basic or advanced). You also tell Entrepreneur whether you want to compete with human beings or computerized chief executive officers who will follow randomly assigned strategies. At the advanced level, external events (like unpredictable, natural disasters) are more frequent and add another degree for the human decision maker. Because of the randomness in the assignment of strategies, there seems to be no way for a human player to outguess the computerized opponent. It also seems impossible to tell whether or how computer strategies respond to the development of the general market. You can only hope to gain insight into your competitors' strategy by continually evaluating his/her own relative market position during the course of the game. This makes for quite exciting guessing. I can assure you!

After each round in the decision making, Entrepreneur gives you with a first evaluation of everybody's success (see Figure 1): the individual participants are represented by a picture of their facilities. Everybody starts with the same garage-type operation, probably in reminiscence of (Ex) Apple's Jobs-Wozniack beginnings. As the game advances, success becomes obvious in the change from garage to sleek, corporate headquarters. The less competitive companies stay in the moderate facilities.

A more informative but less artistic tool for evaluating everybody's performance is the Hot List which I mentioned before (see Figure 2). After digesting these data the guessing begins. Why did company c4 so much better than others? Why is c7 basically bankrupt? Well, the general market report does not give an answer nor does the newspaper Bitt. This is the moment when you try to use all the available analytical tools, like the reports about plant capacities, inventories, sales or the financial statements. You can also visit the warehouse or the work place to uncover free production capacities. This is done by calling very charming, cartoon-like images onto the screen, some of them are even animated: the workers who produce software are evidently working. Good!

Figure 1

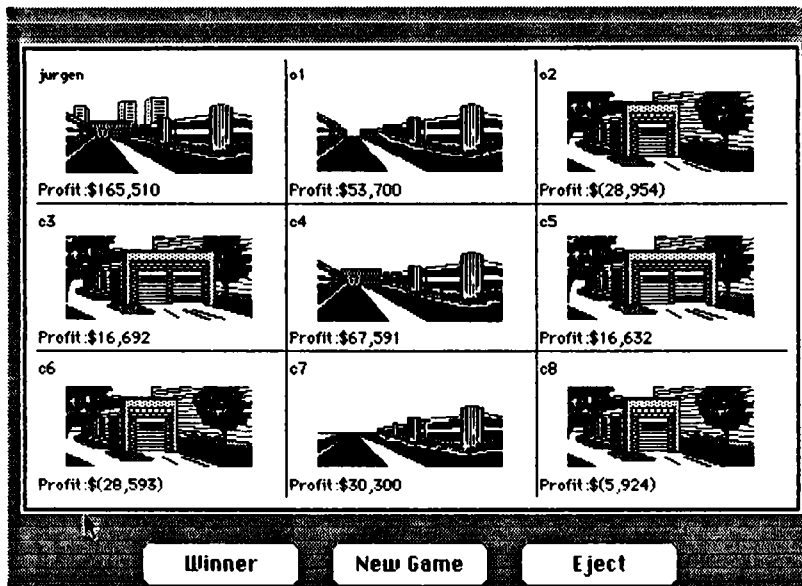
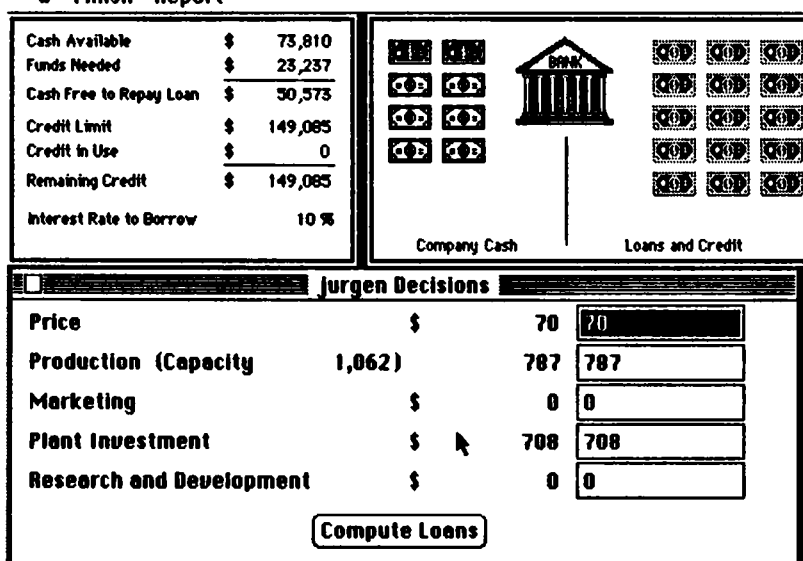


Figure 2

Hot List December 1985						
Hot List December 1985						
	Profit to Date		Current Profit		Market Share	
					Units	\$
jurgen	\$	165,510	\$	12,346	\$ 70	3 % 4 %
c4	\$	67,591	\$	4,173	\$ 46	18 % 14 %
c1	\$	53,700	\$	3,693	\$ 50	16 % 13 %
c7	\$	30,300	\$	665	\$ 61	11 % 11 %
c3	\$	16,692	\$	(708)	\$ 70	9 % 10 %
c5	\$	16,632	\$	(849)	\$ 63	10 % 11 %
c8	\$	(5,924)	\$	903	\$ 59	12 % 12 %
c6	\$	(28,593)	\$	(2,598)	\$ 72	9 % 11 %
c2	\$	(28,954)	\$	(2,286)	\$ 80	8 % 10 %

Figure 3



After scrutinizing all available data (or even without bothering, more about that later) you move on to make the decisions for the next production period (see Figure 3). These involve changes in the prices for software, the numbers produced, the marketing costs, plant development and resources for R&D. The funds for the new financial period have to be available either by digging into last month's earnings or from bank loans. Either way, the fiscal consequences of your decisions are immediately demonstrated in numbers, which Entrepreneur calculates automatically. How convenient! When all the decisions are made you initiate the next production period. The game ends when all competitors go bankrupt or when no more operational cycles are left. The company with the best accumulated earnings is the winner and is rewarded with a flashing victory sign.

In the beginning of my acquaintance with Entrepreneur I played some rather exciting games in which I applied my knowledge of accounting principles and did what the programmers of the game say should be done: I went through the available information and tried to forecast the future based on financial data. The simulation of the real business world really captured me. As a player I really had the feeling that I made rather complex business decisions. After all, one has to consider the interaction of 5 parameters, some of which have multiple effects. A price increase, for example, will make the product less competitive in the markets but increase the profit margin, provided all other factors are kept equal. To avoid negative consequences for the market share of the company, the marketing budget may have to be enlarged. This decision, however, increases the operating cost, and on it goes. There doesn't seem to be a shortage of intelligent actions on the part of the player but I could not come up with a useful strategy. It was tantalizing. Were the computer players superior?

### Some Thoughts about Strategies

I am fascinated with the idea of teaching people by letting them play against a computer. What a possibility for improving your knowledge painlessly. However, it depends on the software designer's capability to incorporate into a game the building blocks for a greater, intellectual concept—let's say a theory or a business strategy. In addition, all the information to be able to adapt a strategy to specific situations has to be present too. Entrepreneur certainly provides a lot of information. My difficulty with it is to decide whether this information is really meaningful. In other words, I would like to know, whether an analysis of financial statements is really needed to play a meaningful game. I know from real life that the health of an enter-



prise depends on understanding balance sheets, income statements, statements of changes in financial positions and drawing the right conclusions from them. But in this game? Who can tell? The computer plays, we are told, with randomly assigned strategies. At least sometimes they do not consider external changes during the game. How come, the computer wins—and let me tell you, it really does! Well, I don't have a satisfying answer. Instead, let me tell you about an experiment in which I played dumb, ignoring all the fancy footwork in this program.

I played several times for 5-6 time intervals at both levels of difficulties against 5 computerized opponents. I almost always won. How? Simply by making no decisions for the first 4 periods, playing the default settings which the program provides. Then, before the last one or two moves I reduced the cost of marketing and R&D to zero. Of course, in a way this is not fair. It is based on a strategy which may be suicidal in the long run. So I played for 12 periods (36 are the maximum) against 8 computerized strategies at the basic level. Again I followed the same strategy: doing nothing for the first 4 periods then reducing the cost for marketing and R&D to zero, then again doing nothing for the rest of the game. To my surprise, I did extremely well as documented in the diagrams: I won the game by a large margin! If winning by doing nothing can be that simple then I doubt that people will go through the trouble of analyzing financial data sheets. If this is true, then good-bye education!

I certainly agree that my sample could be a fluke although I repeated the experiment once with the same result. This really made me think about the claims of the game producers. Would you, dear reader of this magazine, tell me about your experience with this software? Let us do a little research and exchange our data about strategies in future issues! Maybe it is the wrong idea to play against computers, humans could be harder to beat. Unfortunately I did not have any interested human being around to play with. They were all too tied up with pursuing business.

### Evaluation of Entrepreneur

This game has realistic features which one does not find frequently among computer games. Blue Chip Software's products may be the only other example for the Macintosh. I laud the creators of Entrepreneur for their attempt to simulate an environment in which you can use your brain to win! I really got a feeling for the market and for the impact of business decisions. This realism is supported by excellent graphics and the nice organization of tables and reports. The animated cartoons are of dubious value. They are nice to look at but will probably be the first accessories

to be skipped during a heated game. Besides they take forever to appear on the screen.

This brings up another point of criticism. I felt annoyed about the slowness with which this program is executed. This becomes evident when the player wants to look at all the available information. First I thought that this was because of the limited memory of my 128K Mac. But not so, switching to a 512 machine did not change a thing. Then I decided to try the RAM disk—no luck either. Entrepreneur works only together with its resource files, they have to be on the same disk where they occupy 250 kilobytes of memory—too much for my RAM disk with a maximum of 200 kilobytes. So, there is a real snag. I assume the lack of speed in executing the program is caused by the way it is written. You have to be patient and wait until the next version comes out. Sorry!

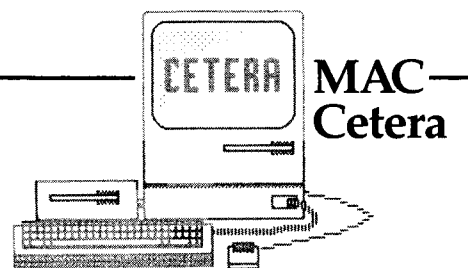
I also realized that an understanding of basic accounting principles helps to play the game. It would have been nice to have the significance of balance sheets, profit and loss reports or cash flow reports explained on disk. Since I am an adamant advocate of the Macintosh interface I think it is anticlimactic to have to study the manual—no matter how well it is written. "On disk-information" is so convenient, you simply click under the apple icon and call help from there without ever the leaving the game. This may be a good addition for a second version. In the meantime you have to be rescued by the manual.

It comes with an aesthetically appealing booklet which is easy to read and contains good graphics with well organized contents. The content is well organized. There are sections on how to get started, how to review reports, make decisions, and formulate strategies. The ending chapter lists the commands and explains the technical terms which make up the financial statements. An understanding of these terms seems to be absolutely necessary for using the reports in Entrepreneur intelligently. This part is too short. Maybe the authors of Entrepreneur wanted to encourage players to deepen their understanding of the business world by studying additional financial literature. I, for my part, would prefer to have all the necessary information in a self-contained form.

My final opinion about the game? I was hooked like when playing Blue Chip Software's Millionaire. Whether true business simulation or not, it is fun to play an unusual game. Entrepreneur is innovative, has nice graphics, makes you think if you want to, and beats any space invader games.

Entrepreneur was created by Harvard Associates, Inc. It is distributed by Microsoft Library, 10200 Northrup Way, Bellevue, WA 98004.

—Jürgen Weber



### • BEST PRESS RELEASE—

Mindscape's October 1985 release on their "off-beat software program (tongue in chip)" Racter.

While the release, entitled "Racter Software program Half-Heartedly Endorsed By The Institute of Artificial Insanity," is, unfortunately, too lengthy to reproduce here, we would encourage our readers to request a copy from Cheryl A. Oliver, Director of Public Relations, Mindscape Inc., 3444 Dundee Road, Northbrook, IL 60062 312/480-7667. We didn't really understand the Terry Southern-esque release, so we ordered the software; we suspect that you won't either, so maybe you will, too! By this time next year, if it lives up to its billing, we expect Racter to have attracted a major, hard-core and "prospectively unhinged" cult following . . . it sounds like a great product.

• **LASERWRITER FONTS**—Century Software, 2306 Cotner Avenue, Los Angeles, CA 90064 213/829-4436 has recently announced the release of two new typestyles for the LaserWriter, and indicated their commitment to produce an "extensive library" of typestyles over the coming months.

The availability of additional fonts has been long awaited by the "desktop publishing" community which was heretofore been limited by the four built-in LaserWriter fonts. Century's new offerings are priced at \$29.95 each, or \$49.95 for both.

• **MACINTOSH ART**—Mr. Michael Gosney recently displayed a collection of more than 25 Macintosh produced artworks at Quel Fromage, Hillcrest, CA. The works were produced with MacPaint and the LaserWriter, and three were enlarged, silkscreened, and offered as limited edition prints. Prices ranged from \$20 to \$150. Additional information may be obtained from Josie Roland, Roland & Martin, 438 Camino del Rio South, Suite B-206, San Diego, CA 92108 619/291-4440. Gosney's work represents the first Macintosh "art" that we've heard of to be released in limited edition, and the investment sounds reasonable.

• **COLOR MACINTOSH**—If you “just can’t wait” for Apple to release a color version of the Mac (late 1986–early 1987?), you might find a new offering from Micah, 15 Princess Street, Sausalito, CA 94965 415/3316422 and Beck-Tech; it’s Chromatron, a “self-contained real-time video scan conversion system” which allows MacPaint images to be created and displayed in up to 16 colors on an external color monitor. Variations on the theme are, we’ve been told, under development by several other respected developers . . . if you’ve gotta have color, you can have color . . . the Mac market abhors a vacuum . . . or an empty niche. As for an Apple color version of the Mac, we’re betting that Apple’s in no hurry . . . color simply isn’t a necessity in the business market.

• **NEW BBS**—The Trap Door BBS in Trail, British Columbia, Canada, invites “all Western Canada Mac Users” (and, we assume, any other interested parties) to try them out at 604/368-5931, 300/1200/2400bps. Randy McCallum, sysop, advises that he’s developing a library of NEON related material.

• **POSTSCRIPT**—Addison-Wesley Publishing Company and Adobe Systems have released two new books on POSTSCRIPT (the language of the LaserWriter) entitled the POSTSCRIPT Language Tutorial and Cookbook and the POSTSCRIPT Language Reference Manual, priced at \$16.95 and \$22.95 respectively. For further information contact Liz Bond, Adobe Systems Incorporated, 1870 Embarcadero Road, Palo Alto, CA 94303 415/852-0271.

• **COMEDY BY WIRE . . . BY MAIL**—Comedy By Wire, computer humor for computer users, available on both The Source and Delphia since late last year, is now available in printer edition. Described as “a parody of the Computer/High Tech Industry in newsletter form edited by professional comedian Billiam Coronel, each issue contains between 10 and 15 ‘news-pieces’ based on overlooked news, stupid products, unknown industry trends and superficial interviews with seriously misinformed,” CBW looks like a bargain at \$9/year (12 issues). Recent issues contained “such newsworthy items as . . . SLOP-VIEW—the ultimate desk organizer . . . a discussion of the breakthrough technology of Scratch & Sniff diskettes, and a hardhitting review of WORDSTAR in which the reviewer flatly stated: “Wordstar is the worst spreadsheet on the market . . .” You get the idea . . . to get more, contact Comedy By Wire, 431 West 45th Street, New York, NY 10036.

• **MACEXPOS '86**—Four MacExpos, co-sponsored by The MACazine and Collin Bryant Associates, Inc., have been scheduled for 1986. The first will be held at

McCormick Place, Chicago, IL, on April 25-27, with others scheduled for New York City, Orange County, and Dallas later in the year. For further information contact John J. Sieberg, Managing Director, Collin Bryant Associates, Inc., 4000 MacArthur Boulevard, Newport Beach, CA 92660 714/859-8866. Further details will be published in The MACazine next month.

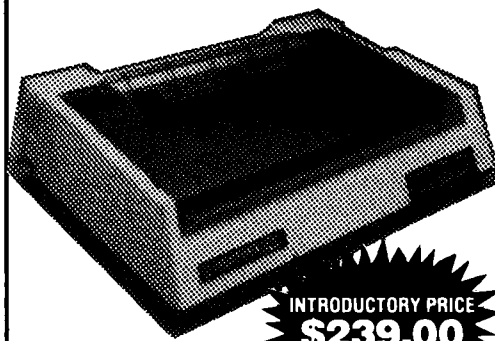
• **MACS TO VAX**—pcLINK, a software package which enables files to be transferred between the Macintosh and Digital Equipment VAX systems via a direct RS-232 connection or through a modem, has recently been released by Pacer Software, Inc., 100 Pennsylvania Avenue, Suite 320, Framingham, MA 01701 617/879-1765. Only the host side of pcLINK is licensed, at prices ranging from \$2000–\$15,000 dependent upon the number of PCs connected to the host system.

• **SWITCHER 4.4**—The latest version of SWITCHER is, at this writing, 4.4 (no predictions as to which version will be out at publication!); it should be available through your dealer, MAUG or almost any MacFanatic around; it’s also bundled with Microsoft Excel. Microsoft, by the way, has also included, with Excel, an excellent 21 page booklet titled “Using Switcher With Microsoft Applications” . . . we assume that it would be available through Microsoft whether you buy Excel or not.

• **MUG NEWSLETTER ITEM OF THE MONTH**—FatBits, “Official Newsletter of C.U.M.U.G.-Conejo Valley Macintosh Users Group and U.M.A.C.-Ventura County Macintosh Club” (Whew!) recently (October '85) ran an exceptional short article titled “Re: FEDIT & Other Devilry” by Bruce Ullman wherein the amazing capabilities of FEDIT in resurrecting lost, trashed and garbaged files was demonstrated. We commend both the article and the program to all of our readers who have ever lost (or are about to lose) data to a “bomb.” Copies of the article should be available through FatBits, P.O. Box 7118, Thousand Oaks, CA 91359.

• **LISA/XL SUPPORT**—The Networkers, 3500 Market Street #103, San Francisco, CA 94131 415/550-0929 or 550-1710 has recently published its premier issue of “The LisaTalk Report,” a 50 page work crammed with some of the most informative Lisa/XL material yet put between covers. This first issue features an edited transcript of the recent LisaTalk forum; future issues will address “A Smooth Transition From Lisa To Macintosh On The XL” and “Lisa/Mac XL Solutions.” This is quality material which should be invaluable to Lisa/XL users. Subscription prices are undetermined at press time, but we encourage our readers to call or write The Networkers for further information.

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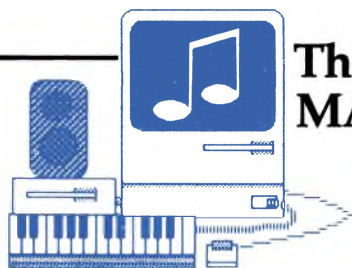
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## The Well-Tempered MAC

This month's column has something for everyone: a dandy new music product for the home market which has potential appeal for the professional musician, a review of the new Professional Composer, and some interesting music and instrument files that would make wonderful holiday presents.

### The Deluxe Music Construction Set Version 1.0

In 1983, Electronic Arts introduced the highly touted Music Construction Set for the Apple II. Though a significant product at the time, it is today, by Macintosh standards, a rather slow and limited piece of software. As the new Deluxe Music Construction Set shows, the limitations of the older product were more a reflection of the capabilities of the Apple II than of the programming ingenuity of the people at Electronic Arts.

To start with, the Deluxe Music Construction Set (DMCS) is a \$49.95 product that can run on a 128K Mac. It is capable of notating and printing music on up to eight staves as well as playing back either four voices through the Mac or potentially all voices through 16 MIDI channels on external synthesizers and drum machines. As I write this, DMCS is the only product under \$100 which allows the user to beam notes (with slanted beams!), flip stems, and notate two different "tracks" of notes with their own separate stem directions on each staff. Other special features include text with all of the Mac's fonts and styles, guitar notation, and LaserWriter support.

DMCS has several ways to enter notes. As with most programs, notes can be entered by using the mouse or by using the mouse with one hand to position notes on the staff and the Mac keyboard to select their duration with the other. An even faster method employs a screen piano keyboard. Having positioned the cursor on staff with the mouse, one can select the note durations on the Mac keyboard with one hand and their pitches by clicking on the piano keyboard with the other hand. Because the piano keys pictured on the screen provide a larger target for the pointer than the staff, I found this method of note entry to be the fastest for any program I have tried other than note entry from an external synthesizer keyboard (Figure 1). Notes may also be sounded as they are entered.

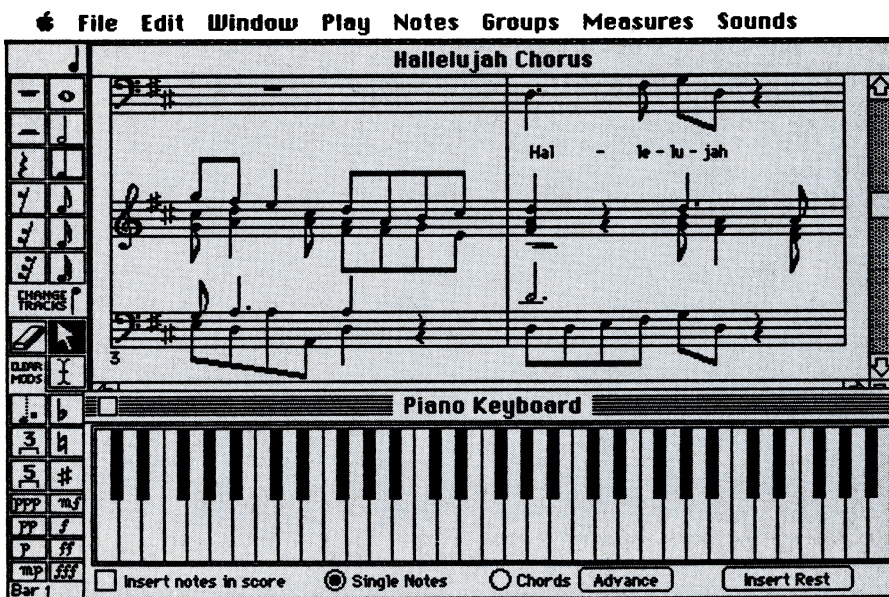


Figure 1. Deluxe Music Construction Set

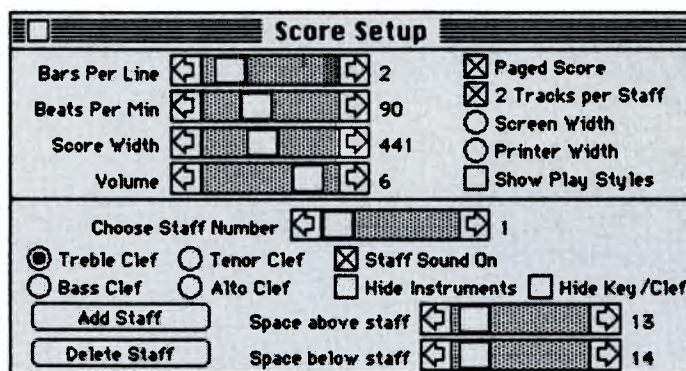


Figure 2. DMCS Score Setup

The user has nearly total control over the placement of symbols on the page. Once notes and rests are entered, they may be repositioned horizontally as well as vertically with the mouse. This makes it possible to avoid most symbol collisions which have plagued users of other programs. Dynamics and various ornaments can be positioned wherever the user would like them. Measures may be resized by simply moving the barline with the mouse. The amount of space above and below each staff is adjustable. Note density for both on-screen display as well as printout is under user control. Other such features can be found in the Score Setup window (Figure 2).

Like ConcertWare+ and MusicWorks, DMCS has a variety of playback features. There are 16 available instrumental sounds as well as a variety of play styles (legato, staccato, vibrato, etc.). Notes may be

heard as they are entered. An entire piece may be played back without changing applications. During playback both a graphic representation of the notes will flash on the screen as well as the notes of the on-screen keyboard. Unlike the current versions of ConcertWare+ (2.3) and MusicWorks (1.1), DMCS is not limited to four voices. Chords may be constructed with any number of notes. Alto and tenor clefs are available as well as the treble and bass clefs. Quintuplets may be used as well as triplets. Does it sound as though this \$49.95 product is perhaps more comparable to Professional Composer than to ConcertWare+ or MusicWorks? See the accompanying product comparison chart.

There are more features in this program than there is room to adequately describe here. Many of these may be found in the manual pictured in Figure 3. Though the manual is written for the non-professional,



<b>Window</b>		<b>Play</b>	
Score		Play Song	%P
Piano Keyboard		Play Section	%S
Score Setup		Stop Play	%Q
Note Palette		Resume Play	%R
Memory Usage			
<b>Groups</b>		Begin Section <<	%<
Tie Notes	%T	End Section >>	%>
Beam Notes	%B		
		Flash Notes	
Slur Notes		Player Piano	
Crescendo		Repeat Play	
Diminuendo			
Octave Raise (8va)		External Speaker	%E
Octave Lower (8vb)			
<b>Notes</b>		<b>Measures</b>	
Up Half Step	%U	Set Time Signature ...	
Down Half Step	%J	Set Key Signature ...	
Up Level	%I	Set Clef ...	
Down Level	%K	Set Instrument	
Up Octave	%O	Set Tempo	
Down Octave	%L		
Invert Chord Up		Insert Measure	
Invert Chord Down		Split Measure	
		Join Measures	
Half Time	%H	Delete Measure	
Double Time	%D	ReAlign Measure	
Flip Note Stem	%F	Begin Repeat	
Set Play Style ...	%Y	End Repeat	
		1st Ending	
		2nd Ending	
		<b>Sounds</b>	
		Pianic	
		MIDI Channel 1	
		Remove Instrument	
		Load Instrument ...	
		Keyboard Play Style	

Figure 3. DMCS menus

the professional composer or educator may find enough features here to make this program an excellent buy.

Unfortunately, as with every music program I have reviewed to date, there is a down side to things. DMCS, like the first release of Professional Composer, does not have a double bar for concluding a piece! There are no brackets or braces for joining staves. Clef changes may be entered only at the beginning of a measure. Sharps are poorly drawn. Rests, though movable, are misplaced on the staff by the program. Some of the playback instruments are nearly inaudible in the bass range. Though the slanted beams look remarkably good when printed in high quality with the ImageWriter, they look terrible on the screen.

According to Electronic Arts, DMCS "is the most complete music composition tool available for personal computers." This statement would be true if the sentence ended, "for under \$100." Both Total Music from Southworth Music Systems and Professional Composer have many more features but are much more expensive. DMCS is clearly superior to MusicWorks in

every category. While it has more to offer notationally than ConcertWare+, DMCS does not equal ConcertWare's sound.

In conclusion I would say that this is an excellent program for the money. Like most other companies, Electronic Arts promises to continue work on the program. In addition, a companion program is planned for release in the first half of 1986. This program will have MIDI input, a sequencer, an instrument editor, and file compatibility with DMCS.

Electronic Arts should be applauded for providing so much for such a low price and encouraged to further enhance this product.

P.S. Owners of MusicWorks can buy this program directly from Electronic Arts for \$29.95 by sending in the back cover of their MusicWorks manual. They will also receive a free utility for converting their MusicWorks files.

### Professional Composer Version 2.0

When I reviewed Professional Composer in the June issue of the MACazine I noted that the program was both a ground

breaking program and a program full of bugs. At \$495 it was, and still is, one of the most expensive programs for the Macintosh, yet it failed to deliver on its promise to notate "anything that would be part of a published score." I concluded my review by saying that "I congratulate its developers on what they have achieved and I eagerly look forward to the promised enhancements without which Professional Composer cannot be unequivocally recommended."

I would like now to enthusiastically and unequivocally recommend Professional Composer. In fairness to its developers, I should mention that when it comes to professional music programs, there were no other pre-existing programs for microcomputers to serve as a benchmark. Versions 1.0 and 1.1 of Professional Composer had problems, but Mark of the Unicorn continued its development and listened to the criticism of its users. The result is version 2.0, and it is stunning.

First of all, the operation is very smooth. I did not find any of the old bugs. I did have problems with the tab key in the new text box, but the problem is minor and surmountable. No doubt it will be fixed in the next version.

Figure 4 gives a good idea of the extent of the program. Figure 5 shows all of the available symbols including many new ones such as percussion, jazz, string, and, oh yes, the double bar! Various enhancements include LaserWriter support, print to MacPaint, note insertion from the keyboard alone, text with access to all fonts and styles, three playback speeds with six different sounds, multimeasure rests (you really don't want the triangle player to have to read all 150 measures of rest do you?), headers and footers, improved high resolution printing, etc.

Is there anything wrong with the new Professional Composer? Well, a few little things come to mind such as the way crossed voices are placed on a merged staff and the placement of accidentals in chords of three or more voices. Keyboard scores are still a pain to create because Professional Composer will not allow two different stem directions to be placed directly on the same staff. Therefore keyboard scores must usually be notated on four staves and merged down to two. These and other issues will be addressed in the next update. In the meanwhile, Professional Composer offers a lot.

Mark of the Unicorn has been listening to its users and is to be congratulated. I look forward to the companion program, Professional Performer, which is a MIDI program that has file compatibility with Professional Composer. It may be available by the time you read this.

I have just one word of advice: buy this one mail-order and spare yourself the high cost!



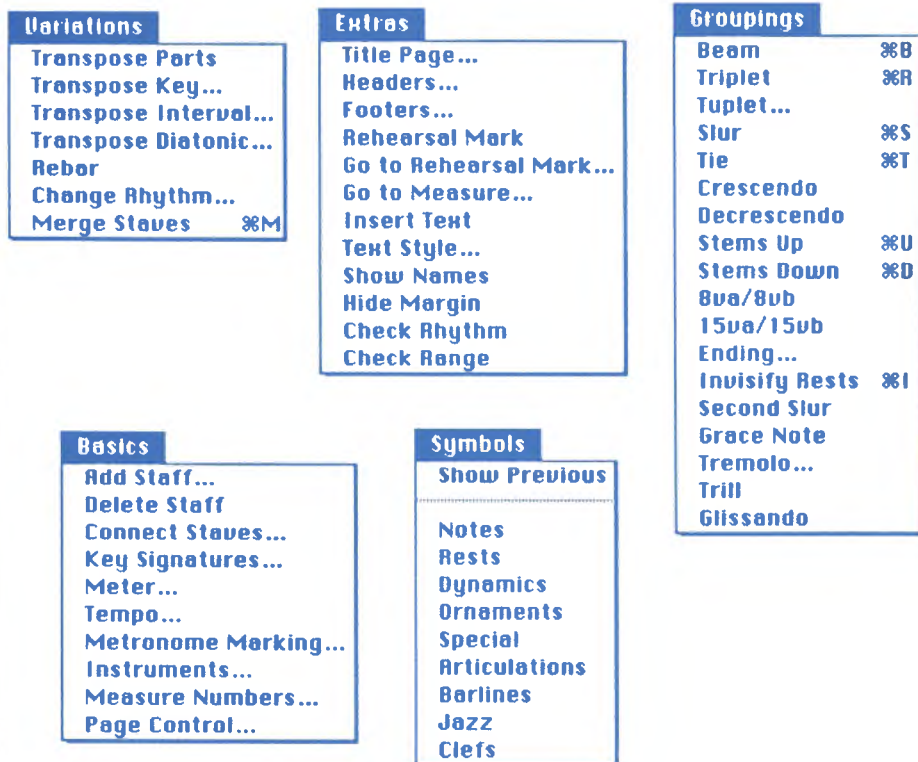


Figure 4. Professional Composer program

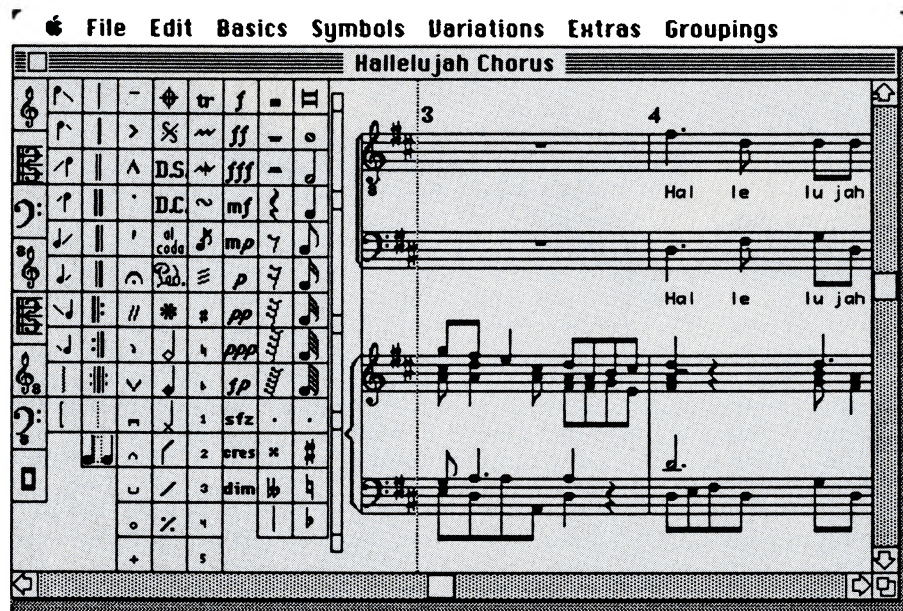


Figure 5. Professional Composer's symbols

## Looking for a Nifty Christmas Gift?

For the person who loves to play music on his/her Mac, loves to tinker with synthesized sound, or wishes to be musically edified, there are several interesting music disks to choose from. Great Wave offers three disks of ConcertWare files for \$15 each: Volume 1—Instrumental Favorites; Volume 2—The Art of Fugue by Johann Sebastian Bach; and Volume 3—Christmas Favorites.

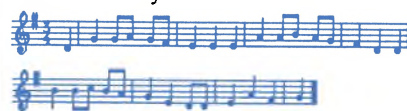
Volume 1 contains 23 pieces from Bach to Gershwin and 19 new instruments including a cornet, timpani, scissors, a train, and a telephone. The piece, Telephone Blues, by Boyd Edwards is not to be missed. Volume 2 contains a MacPaint portrait of Bach, the complete Art of Fugue, 13 new organ "stops," and 17 pages of program notes by Scott Brazial. Though this disk may be a little heavy for some, I found the music fascinating and the documentation excellent. Volume 3 was not complete as I write this. It will contain numerous Christmas favorites as well as many excerpts from Handel's Messiah.

Richard Rae of Raecreations Software offers four disks of Renaissance music and instrument files. Early Instrument Disk 1 (\$10 or \$5 plus a blank disk) contains 28 early instrument files for ConcertWare including such instruments as the clavichord, krummhorn, rackett, recorder, sackbutt, bagpipes, and nakers. A self-taught musician and early music devotee, Richard Rae has been experimenting with synthesized sound since 1975. His early instruments are quite good, and he has included excellent documentation on the disk.

Rae plans to release two disks of ConcertWare music files by the end of this year or in early 1986: Early Music Volume 1 (\$20)—music from 1490 to 1620 and Early Music Volume 2 (\$50 or \$30 if ordered with Early Instrument Disk 1)—the complete 4-part dances from Michael Praetorius' "Terpsichore (1612)." Excerpts from these disks are included on the Early Instrument Disk. They are bound to please any early music enthusiast.

Early Music Volume 1 (\$10 or \$5 plus a blank disk) is also available for MusicWorks. Rae has made the best possible use of MusicWorks instrument file, but the sound is clearly inferior to the sound of the same pieces played on ConcertWare with the early instrument recreations.

Until next year:



—George F. Litterst

George Litterst is a Contributing Editor and a professional musician who, in addition to performing, teaches at Northeastern University and the New England Conservatory Extension Division.

## MUSIC PRODUCT CHART

Features	Professional Composer	Deluxe Music Construction Set
Note Values	128th—dotted double whole	32nd—dotted whole
Key Signatures	all 15	all 15
Time Signatures	1-99	1-99
# of Staves	1, 2, 4, 8, 16, 32, 64	1, 2, 4, 8, 16
# of Clefs	40	8
# of ledger lines	8	4
Tuplets	up to 45	up to 8 above and 11 below
Beams	triplets and quintuplets	slanted
Beam over barline	horizontal	no
Beam over rests	no	no
Flip Stems	yes	yes
Double Sharps	yes	no
Double Flats	yes	no
Text	yes	yes
Fonts and Styles	yes	yes
Brackets/Braces	yes	no
Staff Size	21 pixels high	21 pixels high
Allow extra notes in measure	yes	no
Note density control	yes	yes
Title Page	yes	no
Headers	yes	no
Footers	yes	no
Guitar symbols	no	yes
Jazz symbols	yes	no
String symbols	yes	no
Percussion symbols	yes	no
Hide rests	yes	no
Hide tuplets	yes	no
Transposition	diatonic or by any interval	diatonic, by halfstep, or by 8 octaves
Print to MacPaint	yes	no
Printout	excellent	good
MIDI input	no	no
MIDI output	no	yes
Playback:		
Dynamics	no	yes
Speed Control	3 speeds	1-240 beats/minute
Timbre	6 instruments	16 instruments and 13 play styles
Copy Protected	yes	yes

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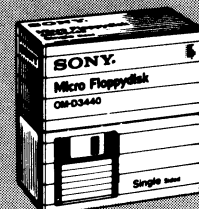
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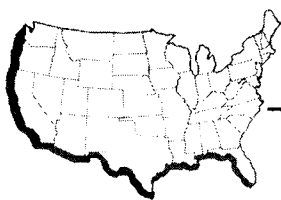
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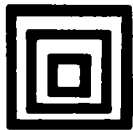
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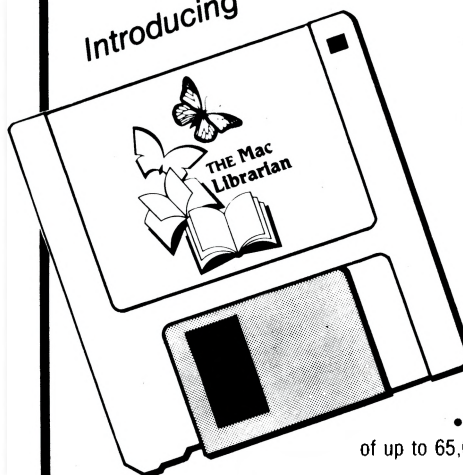
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# GAMING ON THE MAC

## ULTIMA III

**F**rom the fertile mind of Lord British, a.k.a. Richard Garriott, comes the latest saga of the world known as Sosaria, Exodus: Ultima III. For those of you who are not acquainted with this amazing series of role-playing adventure games, a few words of introduction are in order.

Sosaria is a fantasy world of oceans, grassland, dark forests, and impenetrable mountains, ruled by the kind and benevolent Lord British. The landscape is dotted with quiet towns, foreboding dungeons, and even a castle or two. It is generally a peaceful, somewhat idyllic land, except at those times when evil rears its ugly head.

The first game of the series, Ultima I (not currently available for the Mac), dealt with the evil wizard Mondain and his attempt to conquer Sosaria with his evil minions. After his fall, the dirty work was left to Mondain's apprentice, Minax, and her attempts to follow in her mentor's footsteps in Ultima II.

This brings us to Ultima III. Both Mondain and Minax have been conquered, but don't believe for a minute that evil has been eliminated from Sosaria. According to the instruction manual, fragments of a manuscript were found in the ruins of Minax's castle which indicate that an unholy alliance took place between Mondain and Minax. The result of this union is unknown, but it is known that evil and its minions have returned to Sosaria. The only clue to the entity responsible for this is a word scrawled in blood on the deck of a deserted merchant ship: EXODUS.

And so it is up to you to form a party and travel throughout Sosaria, gaining knowledge upon the way until the party is finally ready to confront the root of this evil and bring peace once again to the land.

In a role-playing game, the player creates one or several characters by deciding on such things as a character's race, sex, profession, etc. The player is then given a number of points to distribute among various physical and mental attributes of each character, i.e., strength, dexterity, intelligence, etc. The greater the attribute, the more proficiency a character has in that area. Each character usually starts at level 1 (a level signifies the amount of experience a character has) and with a certain number of hit points (the amount of damage a character can take before he perishes). During a journey, a character

will gain experience and also riches, which can usually be used to buy supplies, equipment, and occasionally other things.

The first thing you must do is create the characters that will constitute your party of from one to four adventurers. Each character may have one of each category of characteristics: (1) sex: male, female, or other; (2) race: human, elf, dwarf, bobbitt, or fuzzy; and (3) profession: fighter, cleric, wizard, thief, paladin, barbarian, lark, illusionist, druid, alchemist, or ranger. The sex of a character does not appear to have any influence on his/her/other ability, but adds a little variety. Race is very important in determining what profession a character should be.

Profession is very critical in character creation as an ill-matched group will not last very long. The eleven different professions can essentially be divided into into four groups: (1) fighters; (2) thieves, who are effectively able to steal and to disarm traps; (3) wizards, who have the ability to cast sorcery spells; and (4) clerics, who can cast prayer spells. There is overlapping of professions; for example, druids can cast both sorcery and prayer spells and rangers can also cast both types of spells as well as steal and disarm (these are not the only professions that overlap).

Attribute points are assigned to each character in four areas: strength, dexterity, intelligence, and wisdom. You have 50 points to distribute, with no one attribute being greater than 25 (at least at the start) or less than 5. This is the most crucial part of character creation as the attributes need to be assigned according to the profession of the character. For example, fighters need strength, so giving a fighter few points in this area will probably lead to his early demise. Attributes can be raised past their initial limit during the course of the game, but doing this may be difficult and will cost quite a bit.

You can have a pool of twenty characters from which to form your party, so you should create a variety and experiment with different combinations of characters until you find the right one. A party consisting of four fighters will have an immense amount of muscle-power, but will be hampered by its inability to cast spells. A good rule of thumb is to have one fighter, one with the ability to cast sorcery spells, and one that can cast prayer spells.

After the characters have been created, it is time to form the party and journey forth into Sosaria. The play-screen (Figure 1) has a list of the characters at the top, the play-field at the right, and on the left: (1) an area that has a compass, a moon phase indicator, and a wind direction indicator; (2) an area with commonly entered commands that can be clicked on; and (3) an area to type in commands. The various menus can also be used to select commands. The party is designated by a single character in the play-field.

Each new character starts with 150 gold, 150 food, cloth armour, and a dagger.

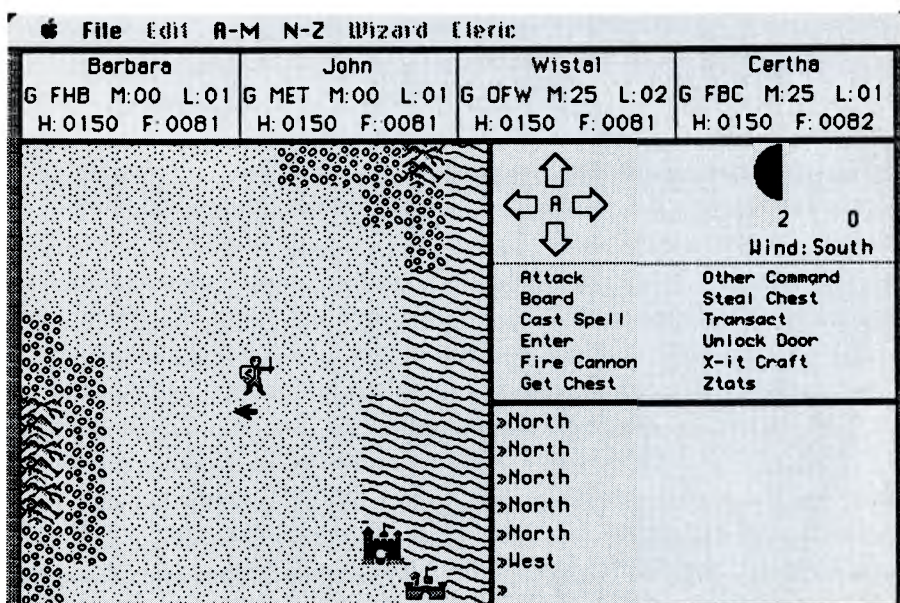


Figure 1. Typical screen from Ultima III. The four characters are (1) Barbara, a female human barbarian; (2) John, a male elf thief; (3) Wistal, an other fuzzy wizard; and (4) Certha, a femal bobbitt cleric.



Once the journey begins, the party must obtain additional provisions and equipment. This can be done by visiting towns and transacting with the merchants there (note that not all towns may have everything the party needs). Of course they will have to pay for what they want with gold, but if one of the characters is adept at it, he may be able to steal things. Stealing is not without risk, for if the party is caught stealing, it will be attacked by the guards present and they will be very difficult to defeat.

The party may also want to find an alternative to travelling by foot, for that is slow and the food supplies dwindle faster. They may find horses available, but they will probably have to buy them and horses do not come cheap. To travel the ocean, a ship is obviously needed. The only way to obtain one is to wait for it to appear, but it will be under the control of pirates and the party will have to fight to obtain it.

A particularly unique mode of transportation are the Moon Gates, which can teleport the party from one place on Sosaria to another and even to locations that are inaccessible by other modes of transportation. The appearance of these is dependent upon the phases of Sosaria's twin moons. There are several Moon Gates scattered throughout Sosaria and the appearance of each is dependant upon the conjunction of phases of Sosaria's twin moons. These will probably be used often early in the game, but to a lesser extent once alternate transportation is found.

Combat will occur when the party comes in contact with any of the various creatures that inhabit Sosaria, except in the towns (it will only occur there when the party commits a crime such as stealing or fighting). When combat does occur the play-field changes to a close-up view of the encounter (Figure 2). The party appears the lower half of the play-field and the enemy the upper. Each of the characters gets one move and then each enemy character gets a move. This continues until either all of the party or all of the enemy is eliminated.

Every time one of your characters kills one of the enemy he is awarded a certain number of experience points, based on how dangerous that creature was. For each 100 points of experience a character obtains his level increases by one. With an increase in levels comes a corresponding increase in the number of hit points a character can take (if you know how to get the hit points increased).

As the party journeys throughout Sosaria, it will probably occur to you fairly early that you have no idea how to even get them to Exodus (you will probably have an idea where it is), much less defeat it. You are going to need help in your quest and it can be obtained if you talk to the right people. The people inhabiting the

towns and castle(s) are particularly valuable sources of information, but not all of them have anything important tell you. So it is probably a good idea to talk to everybody you can until you get the help you need.

If you have played Ultima II, you probably conclude that the dungeons were more trouble than they were worth. They require careful mapping and are extremely hazardous, especially in the lower levels. Forget that in Ultima III. Your party is going to have to enter them if it has any hope of defeating Exodus. There are very important clues here along with certain necessary items and great riches. While the upper levels of each dungeon are relatively easy to explore, as you descend lower you will encounter more and more powerful creatures. It is unwise for a party of inexperienced adventurers to descend too far, as they will have a difficult time surviving the dangers that lie there. An experienced party, however, will probably find journeying to the depths to be worthwhile as they will be able to amass a great amount of experience points.

Also in Ultima II there was enough treasure to be had on the surface without having to raid the dungeons. Again, that is not the case here. If the party initially tries to make its fortune travelling solely above ground they will probably remain in poverty for a long time.

Once a party has obtained all the clues and items it needs and has gained enough experience, it will probably be ready to attempt to defeat Exodus. The operative word here is attempt, for nothing the party has experienced to this point will really prepare it for the onslaught that will greet them once they enter Exodus' domain. It will really take a party of powerful characters to return Exodus to the depths from which it came.

The only negative comment I have about Ultima III is really a minor implementation feature that could ultimately (no pun intended) lead to disaster. The screen where you create your characters, form your party, and begin or continue the journey contains a Player menu. This menu has a selection to delete or examine a character after clicking on his icon. If you select Delete character, that character will be permanently deleted. The game will not ask for confirmation. So, if you make a mistake or if your hand or the mouse slips, you may accidentally delete a character. You are going to get pretty upset if you happen to delete a character that you have spent a lot of time developing. The only advice I can give you is to be careful when using this menu.

I commend the authors of the program, Lord British and James R. VanArtsdalen, and the person responsible for the graphics, Marsha Meuse, for another game that looks like it was originally designed with the Mac in mind. It conforms very well to the Mac standard and is a joy to play. The elaborate package includes an instruction manual, a book of sorcery spells, a book of prayer spells, a reference card, and a full-color cloth map of Sosaria.

I have nothing but praise for Ultima III. It is without question one of the best games available for the Macintosh (or any other computer for that matter) and definitely deserves a place in the library of any game player. Now bring on Ultima IV.

Ultima III is heavily copy-protected but it is copyable by some bit copy programs.

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— Joel Reid

Joel Reid is a Contributing Editor and a programmer analyst.

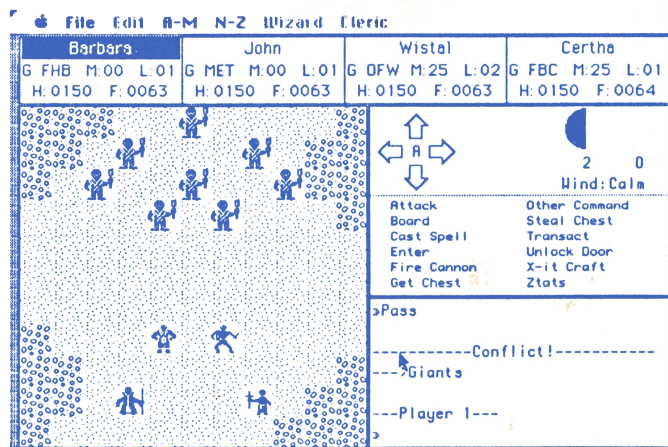


Figure 2. Combat scene. The party of adventurers is being attacked by a party of eight giants.



# VERTICAL MARKETS

## Data Management for Small Business

**T**his month our guest columnist Chris Cardiff discusses Small Business Data Management within the framework of Database Management Systems (DBMS).

**W**hen is a database management system (DBMS) not a database management system? Although you may not ask this question often, the answer is important to many people, particularly those of you in small and medium businesses and you who develop software for those markets. The answer is also important to individuals who have pondered the difference between a \$100 DBMS product for their Macintosh and systems which cost several times as much.

The short answer to this intriguing question is that a DBMS is not primarily a DBMS when its capabilities have been enhanced and extended so that it is actually an applications development environment. While still being completely functional as a DBMS, an enhanced system can be used where the database functions are merely the underlying features employed to develop other applications. This lifts the product into another category that is, in many respects, more akin to a programming language.

There are many software products available for the Macintosh that fall under the label of a DBMS. This category is very broad however, and the novice is likely to feel bewildered when he first looks at the plethora of products which manipulate data. Most of these products fall into three categories: (1) simple filing programs like Microsoft File, (2) mid-range products like FileMaker and (3) fully relational, application development environment products like MacLion and Omnis3 (for a discussion of relational DBMSs, see our July issue). Products from the last category are also known as high-end database management systems because they contain programming applications which you can use to enhance and adapt the package to suit your needs. We will focus on these high-end systems and explore their advantages for small and medium businesses.

### What is an Applications Development Environment?

Let's talk about programming first. An applications development environment is

one which provides the complete facilities for developing a software solution to a specific problem. This is commonly called an application. Typically, this environment consists of a text editor or word processor for writing the source code, a compiler or interpreter for translating the source code into symbols understandable to a computer, and possibly a linker to join compiled code segments together to form the complete application, or program. Most software developers use an environment similar to this to create their products, writing their source code in some wellknown programming language like Pascal or C.

Most programming languages have certain basic functions, constructs, and features in common. They usually provide a means of looping, or iteratively performing a similar series of commands. An example in Pascal is the Repeat . . . While feature. There is also some manner of decision making. In Pascal, this is illustrated with the If . . . Then . . . Else feature. Another common function in programming languages is the ability to branch to another area of code, or subroutine and begin executing instructions from there.

A DBMS-based development environment contains these features as well. MacLion is an example. It has a text editor for composing the source code of its own Forth-like programming language. The source code can then either be interpreted for interactive testing or compiled for execution speed once the Leo programming mode has been invoked. There is also a feature that allows the linking of various sections of compiled code.

### The DBMS Environment

**A** DBMS has a distinct feature which is not common in other environments, namely, the programming language that is part of the DBMS environment which offers advantages for developing applications.

Any application that requires data manipulation or the storage and retrieval of data, can benefit from using the standard Read and Write functions that are part of a DBMS programming language. In addition, there is usually a means of selectively accessing data based on criteria supplied by the developer or user. Another advantage is the number of data types supported by these environments. Besides the standard integer and text string data types,

there are likely to be date and time data types, and, with a Macintosh, a picture data type.

While these features might sound minor by themselves, they eliminate the need for the application developer to be concerned about an entire range of problems that involve efficient means of data storage and retrieval. Consequently, development time for an application is dramatically reduced by having available the underlying DBMS for handling these fundamental data management tasks.

This allows a developer to concentrate on the aspects of an application that are unique to it, without being concerned about the details of data management. For example, consider the variety of data associated with an order entry application. First, there is the necessary customer information like name and address. Then, there is the specific order information like item description, quantity ordered and price per item. Further, these data groups could also be related to different shipping requirements for each customer or to data about current inventory.

With the DBMS handling details of data storage and retrieval of all the various data elements, the developer can concentrate on how all the pieces and groups relate together, and how to present them in an easy-to-use and understandable format to the end-user.

With a fully relational DBMS, you have the greater advantage of being able to more flexibly manipulate your data. Besides having access to programming tools that allow the quick retrieval of required data, the applications developer is able to join, or cross-reference data from different relations, or files. These relational features allow the easy linkage of a file that contains information about a customer to the file containing data about customer orders or to another file containing billing information.

### The Small Business Advantage

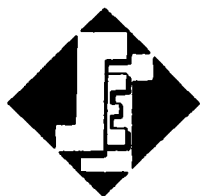
How does all this translate into an advantage for the smaller business? Every business has at least some fundamental aspect associated with managing data. At its simplest, this could consist of keeping track of sales. A more complex operation could involve managing customer order information, inventory control, job costing, etc. When it comes to managing this basic

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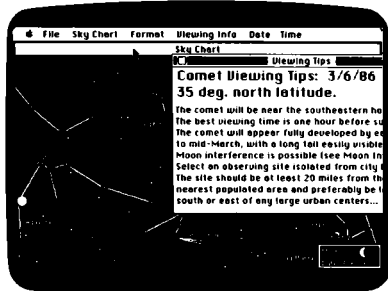
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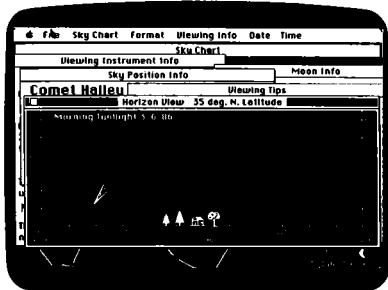
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business data, the most efficient, cost effective, and productive way is with the combination of a personal computer and a DBMS package that falls into one of the categories described above.

Choosing a personal computer should be easy, especially for businesses which have not yet computerized their operations, or where past attempts to computerize have produced less-than-satisfactory results. Most of the people in such businesses realize that sooner or later they will have to computerize their operations to some extent, if for no other reason than to remain competitive with the shop down the street.

While the innovators may have already computerized their operations, those lagging behind in the computer revolution should consider the Macintosh because of its user friendliness and intuitive operation. As Apple backs away from its abortive attempt to break into the large corporate market with the Macintosh and refocuses its marketing efforts on its traditional strongholds of education and small to medium businesses, these groups that will benefit. These are the people for whom Apple's famous "computer for the rest of us" slogan has special meaning.

As for the data management software tool that will accompany the Macintosh into these businesses, that partially depends on the nature of the data being managed. If it involves simple sales data, a filer program is perfectly adequate for the task. If the data involved is more like the order entry example above, where different groups of data need to relate in some manner to other data groups, then a business would definitely benefit from a full-featured relational DBMS with an applications development environment.

### Vertical vs. Horizontal

A general DBMS falls into the category of a product designed for the horizontal market, meaning that its capabilities are general enough so that it appeals to a wide cross-section of users. With an enhanced relational DBMS, a user can custom build his own application on top of this horizontal product for a very specific, or vertical market.

The advantages of a product that furnishes a foundation for an application, while allowing the rest to be custom built on top of it, cannot be overstated. A customized solution to data management needs can rapidly be developed for small and medium business.

This ability to customize can mean the difference between data management and information management. Instead of having an electronic filing cabinet, which is an advantage in itself, a custom application can provide the information in the form of answers to key questions. Instead of merely generating a list of customers and their

orders, this application could provide information about who the largest customers are and what products are most popular at what time of year.

While some horizontal products provide this kind of ad hoc query facility, again, they are designed for a broad base of use and do not meet the specific needs you might have. Neither are they as efficient and flexible as the enhanced DBMS. An applications development environment allows you to tailor an application exactly to your requirements, in essence, put your business on an equal footing with larger businesses that have their own data processing departments.

### Commercial Vertical

While it should be possible for most small business people build their own application, some of you may not want to do that. There are professional developers who develop software for specific vertical markets. The application packages thus developed provides a middle ground between a strict horizontal package and complete customization.

When an application is aimed at a vertical market, it is first important to identify a market segment. Examples of market segments could be banking, finance, insurance, or, on a smaller scale, dentistry, chiropractic, and dry-cleaning. Each of these types of business have their own specific requirements that would not be addressed by a single horizontal package. The vertical application developer can identify one of these as his niche and develop a package that solves all the problems of that particular market segment. Or, in some cases, a business that has developed its own custom application may want to market it to other companies in its industry.

The vertical market for the Macintosh is currently in its infancy. It is one of the last bastions where the lack of Macintosh software is still a legitimate concern. Many software industry analysts believe that vertical software is one of the next big growth markets for software sales. Realizing the importance of this market, Apple has formed a program to help support the development of vertical market software that will complement their focus on the small to medium businesses. However, to see how big the vertical software market really is, it is currently necessary to examine the IBM PC world.

There are two prime examples in the PC environment. The first is the product that introduced DBMSs on microcomputers, dBase II. By itself, it spawned an industry of companies that built their applications on top of dBase II and then marketed those applications to others. The second example is the Lotus spreadsheet program 1-2-3; companies have developed sophisticated macros which are packages of com-

mands that can be easily invoked to perform specific functions. While it may be some time before we see this kind of explosion in the Macintosh marketplace, we can see the beginning. With the availability of database programs like MacLion and Omnis3 and spreadsheet programs like Excel, it will just be a matter of time.

### Personal Computer, Personal Software

Many of the early innovators who computerized their businesses quickly discovered a couple of problems. First, the horizontal packages they purchased were so general that they didn't do the job. Second, some of them were too complicated to use without technical support, help which was either unavailable or too time-consuming.

Many small businesses compete with their larger brethren by emphasizing service and giving their customers individual, personalized attention. This is similar to what vertical software does for small businesses. It provides individual, personalized solutions to their business data problems. A combination of a Macintosh with the right vertical application addresses both of these problems. You can dramatically increase your productivity by saving time and effort, decreasing the

amount of errors and providing increased control over the data management aspects of the business. These factors all lead to increasing the bottom line of a business. Isn't this what business is all about?

—Chris Cardiff

Chris Cardiff is a database expert and President of VertiSoft, a company that develops Macintosh vertical market software for professional groups.

### Solutions of Interest

#### • Joint Marketing Agreement

*Lotus Development Corporation, BPI Systems, Inc., Great Plains Software and Open Systems, Inc.* have recently announced a joint marketing agreement "designed to offer more advanced solutions to the fast growing small business community." The agreement provides for each of the latter companies to "update their products to include a clear menu driven path to translate files between their accounting packages and 1-2-3, Symphony or Jazz. The companies will continue to independently market and support their products with additional marketing support from Lotus."

#### • VARBUSINESS.

Computer Systems News has introduced a monthly magazine supplement entitled "VARBUSINESS" which features

# SONY®

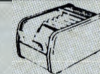
## 3½" Disks For Your Mac

Ten-packed diskettes from the inventor of the 3½" drive. Treat your MAC right, use the original 3½" disk.



<b>\$1.95</b>	<b>\$1.89</b>	<b>\$1.85</b>
each	each	each
20 Qty.	50 Qty.	100 Qty.

### DELUXE ROLLTOP FILES



Classic rolltop design holds up to 55 3½" disks. Anti-skid feet, color-coded labels and dividers. Retail Price...\$24.99  
Many color choices! You Pay Only...**\$17.49**

### APPLE IMAGEWRITER RIBBONS

Sold in dozens... **\$3.45** each

**Rainbow 6-Pack...\$4.75** each  
(Red, green, yellow, blue, purple, brown).

### CALL TOLL FREE 1 800 USA-FLEX

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10:30 to 2:30 Saturdays

Shipping/handling additional. Minimum order \$50.00. Visa, Mastercard and prepaid orders accepted. Corporations rated 3A2 or better and government accounts are accepted on a net 30 basis. C.O.D. orders add an additional \$5.00 special handling charge. APO, FPO, AK, HI & PR orders add an additional 5% of the total order amount to cover PAL and insurance. Illinois residents add 6 1/8% tax.

## USA★FLEX

135 N. Brandon Drive Glendale Heights, IL 60139

# Improve Your Memory With a 2Mb Macintosh™

If you really want your Apple Macintosh™ to perform to its full potential, you need random access memory. Lots of it. A 128K Mac is barely adequate for serious computing. Before you know it you've run out of memory and you're swapping disks like crazy. And have you noticed that the most powerful and sophisticated programs for the Mac require at least 512K RAM?

Which brings us to the 512K "Fat Mac." It's an improvement but it still leaves you wanting more. More space for a RAM disk, more space for more applications, and more speed.

Centa Systems has the solution. We can upgrade your 128K or 512K Macintosh to as much as 2 megabytes of random access memory. That's four times more memory than a 512K Mac and 16 times more than the 128K model. (If you don't need a full 2Mb, we also handle .5Mb, 1Mb, and 1.5Mb expansions).

This is genuine RAM, not just a large RAM disk. And it's fully compatible with the Mac's electronics and operating system. The only way you know it's there is by the enormous amount of data and programs you can store in memory and by the incredible access speeds.

For example, using Switcher™, you'll be able to load up to eight applications at once and switch between them in less time than it takes to lift your finger off the mouse. Now *that's* power!

Apple may introduce an "official" 2Mb Macintosh. Someday. But if you want one today, call or write Centa Systems for more information. You'll thank us for the memory.

## CENTA SYSTEMS, INC.

5308 Derry Ave, Suite C, Agoura Hills, CA 91301  
(818) 889-6246

Apple, Macintosh and Switcher are trademarks of Apple Computer Corporation.



an "in depth editorial guide to VARS in their understanding and operation within the computer industry and user marketplace." For further information contact CMP Publications, 600 Community Drive, Manhasset, New York, NW 11030 516/365-4600.

#### • Data Entry Devices

We're providing information on the following new data entry devices and systems in the belief that data entry technology is critical to the eventual development of thousands of new small business applications and systems.



## SWEEPSTAKES WINNERS

### Merry Christmas to our Sweepstakes Winners!

The cards are all in and the winners have been chosen for our Fall Sweepstakes.

#### Grand Prize

Congratulations to **Captain Marvin & Deborah Williams** of Yuma Proving Ground, AZ! They are the Grand Prize Winners of a 512K Macintosh, 5MB Corvus Omnidrive hard disk, Nevins Microsystem's Turbo-Charger, I/O Design's Macinware Luggage Set, ESoft's ColorPrint, and Ormsystems' Hugger.

#### First Prize

Our First Prize Winner of a Macbottom 10MB hard disk drive and Ormsystems' Stroller is **William H. Pierre, Jr.** of Marysville, WA.

#### Second Prize

**Dr. Roger Katz** of Hewlett, NY has won Centa Systems' 512K Upgrade and Ergotron's MacTilt.

#### Third Prize

The entertaining Third Prize goes to **Gary M. Comeau** of Long Beach, CA: MacNifty Stereo System, MacNifty Switch, Silicon Beach's Airborne!, Great Wave Software's Concertware, and Magnum Software's Slide Show Magician.

#### Reserve Grand Prize

**Emily P. Kingsley** of Chappaqua, NY has won a new software package each month for 12 months, especially selected by the staff of The MACazine.

The names for the remaining 999 prizes have been drawn and will be delivered within 6-8 weeks. Winners will be notified by mail.

#### Amazing!

*Automated Labeling Solutions*, 10840 Millington Court, Cincinnati, OH 45242 513/984-3020 offers a full line of advanced Bar Code Labeling and Product Marking Systems, including complete Macintosh systems. Videx, Inc., is introducing at COMDEX a new product called TimeWand, a highly portable (credit card size) bar code reader with built-in clock. TimeWand is the ultimate in miniaturization . . . it features a rechargeable battery which will power TimeWand for up to three days, 16K of RAM and stores 1750 bar code scans. It's compatible with Jazz, MultiPlan, Excel, Omnis, Helix, and File. Retail price range \$100-\$250.



#### More Amazing!

*Cauzin Systems, Inc.*, 835 South Main Street, Waterbury, CT 06706 203/573-0150 has just announced a technology for personal computers, including the MAC which may "dramatically change the way information and software programs are transferred, stored and entered." The system, Softstrip, allows for encoded patterns of highly condensed software and/or data to be printed in a 5/8" wide strip directly into the pages of a publication. Consumers and subscribers may then read the data directly into the computer with the Cauzin Reader, a lightweight optical scanning device; a single strip may contain up to 5.5K of data, and linked strips carry up to 45K per page. StripWare, as Cauzin calls the software formatted product, will be sold in computer retail outlets and bookstores, under license from major software developers and authors. Retail price for the Macintosh version of the Reader will be \$200; availability January 1986. (Why didn't we think of that? Why didn't you?)

#### Even M-O-R-E Amazing

*Data Entry Systems*, 6767 Madison Pike, Suite 195, Huntsville, AL 35806 205/830-2766 has developed a new device called ScriptWriter which allows data to be entered directly into the computer as it is being written, "with an ordinary ball-point pen" . . . ScripWriter "not only interprets handwritten data, it can also be used for graphics data entry . . . or to replace the mouse or other cursor positioning device." Scriptwriter will be demonstrated at COM-DEH. (!!!) Footnote: We have it on good authority that Steve Jobs' concept of a "DynaBook" Macintosh was to incorporate

a book/lap-sized computer with built-in hard disk, modem and cellular phone communications software . . . and . . . would feature a tactile-screen interface on which a user might write with a ball-point-like stylus. Hmmmm!

#### • More solutions . . .

*Computer Conversions, Inc.*, 9580 Black Mountain Road, Suite J, P.O. Box 261168, San Diego, CA 92126 619/693-1697 has recently expanded their data transfer services to over 450 computer systems, including the Mac-to-and-from almost any computer. A detailed brochure is available from the above address.

Paladin Software Corporation, 3255 Scott Boulevard, #7C, Santa Clara, CA 95054 408/970-7300 has initiated a new "site licensing" program designed to facilitate sales to large corporate customers. Contact Hugh Bowen, Manager of Marketing, at the above address for further information. We've received some preliminary rumors on an upcoming upgrade of Crunch (January?) and are impressed . . . it sounds like dynamite! More later.

*RealData*, 78 North Main Street, South Norwalk, CT 06854, P.O. Box 691, Southport, CT 06490 203/255-2732 has released a series of real estate analysis templates for use with Microsoft Excel. Six packages are currently available including Income Property Analysis, Limited Partnerships, Single Family Residential Marketing, and other real estate applications. Additional releases are planned. Retail prices range from \$100-\$295.

*Microcom, Inc.*, 1400A Providence Highway, Norwood, MA 02062 617/762-9310 has scheduled nine one-day seminars to be held nationwide between November 1985 and March 1986 on "Dial-Up Communications: Solving Your Applications Puzzles." The seminars are aimed at DP Planners, Data Communications Professionals and Microcomputer Users involved in developing dial-up applications. Registration fee is \$75. Contact Doug Landfield at Microcom for further information.

*Almont Engineering*, 1235 DePaul Way, Livermore, CA 94550 415/449-1237 has released its MacDarvish Supervisory Control and Data Acquisition (SCADA) system for the Mac. This is a real-time software product which the developers claim "outperforms all the IBM similar products available." It is the only known Mac SCADA system currently available. Price dat \$5495 complete. A brochure is available.

#### •VAR Directory

*Chain Store Guide*, 425 Park Avenue, New York, NY 10022 212/371-9400 has announced availability of the 1985 Directory of Value Added Resellers at \$289. ●



# INTRODUCING THE ONLY COMBINATION OPTICAL SCANNER/PRINTER FOR APPLE MACINTOSH<sup>1</sup> AND IBM PC<sup>2</sup> IMAGE BLUE \$1295

Fully compatible with MacPaint,<sup>1</sup> MacWrite,<sup>1</sup> and PC Paintbrush<sup>2</sup>

With Image Blue, up to 4 graphic pages can be stored on a single floppy.

Scans (to screen or memory) or prints a full page with high resolution in 3 minutes.  
200 DPI's horizontally and vertically.

## ALSO...

set up a facsimile network with or without personal computers.

Image Blue, with its built-in RS 232 port is the easiest way to scan and print text and graphics in and out of Macintosh Office<sup>1</sup> IBM PC<sup>2</sup> network, or any other existing network.

Call today for the full story.

**IMAGE COMMUNICATIONS, INC.**  
640 West Putnam Avenue P.O. Box 4809  
Greenwich, CT 06836-0086  
(203) 661-0607

<sup>1</sup>Trademarks licensed to Apple Computers, Inc.  
<sup>2</sup>Registered Trade Mark of IBM.

## ISAM for M-S BASIC

Indexed Sequential Access Method now available for M-S BASIC on the MAC!!

ISAM takes the drudgery out of random files. You don't have to keep track of record numbers anymore, ISAM does that. All you do is tell ISAM the key (could be a name, social security number, telephone number, etc.) of the record you want and it tells you what record number to use!

Now you can easily write your own database programs!

Implemented as "Library Subroutines" for version 2 of MicroSoft BASIC, ISAM supports:

- Multiple ISAM files/program
- Multiple indexes/file
- Multiple (discontiguous) keyparts/index
- Duplicate keys allowable on any index
- Automatic or manual index updates
- Random access by any index
- Sequential access (forward or backward) along any index
- Multiuser record lock (it's SWITCHER ready!)

ISAM will run on a 128k MAC without an external drive. With 512k and a hard disk it can easily handle huge files.

ISAM comes with a User Guide and a set of sample programs showing how to use it to do everything from file definition/creation to simple inquiry to multi-index update to multiple interdependent file maintenance; and it costs only \$79.95. Not convinced? Then try our \$9.95 demo disk! We'll give you full credit for it if you order the complete package within 2 months of your demo disk purchase!

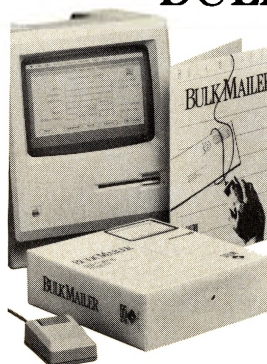
See your local dealer or order direct from

### Rocinante

Box 210682  
Auke Bay, Alaska 99821  
(907) 789-2947

Checks, COD's, and Money Orders welcome (prepayment required). Please add \$5.00 shipping and handling to all orders.

## The most powerful mail list program ever developed! BULK MAILER.



BULK MAILER is specially designed for managing large mail lists. It is easy-to-use, fast and totally complete.

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Seattle, WA 98103  
(206) 633-1469  
Visa/MasterCard accepted

Macintosh is a trademark of Apple Computer, Inc.



# Now you can cut and paste up to an entire MacPaint document!

*"At last, the tool I needed!"*

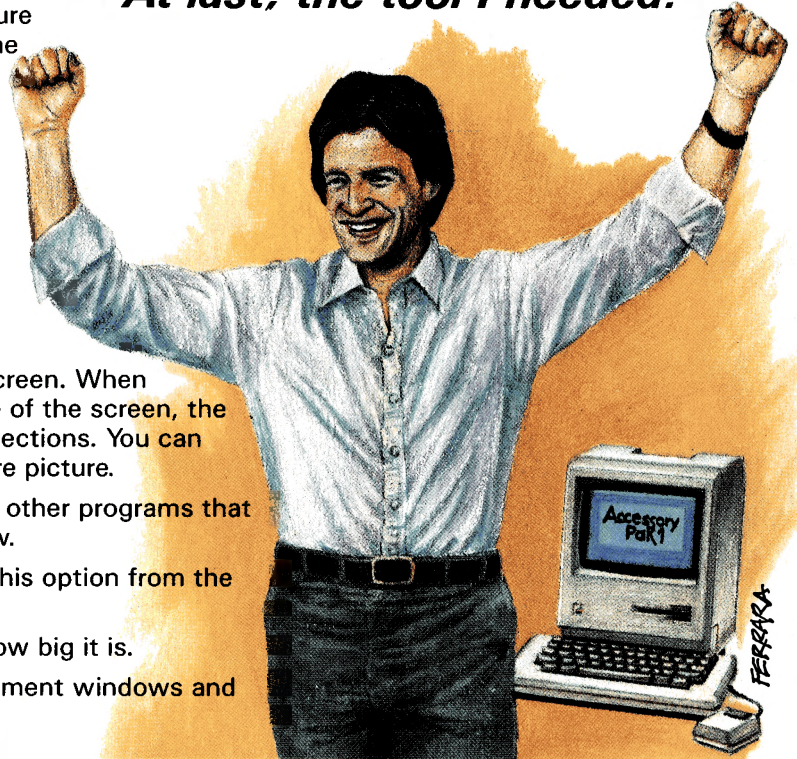
Do you need to paste a half page MacPaint™ picture into MacWrite™ or MacDraw™? Or maybe combine two large portions of two separate pictures? Now you can overcome the limitations of the MacPaint window size with Paint Cutter™, one of several useful tools on

## Accessory Pak 1™

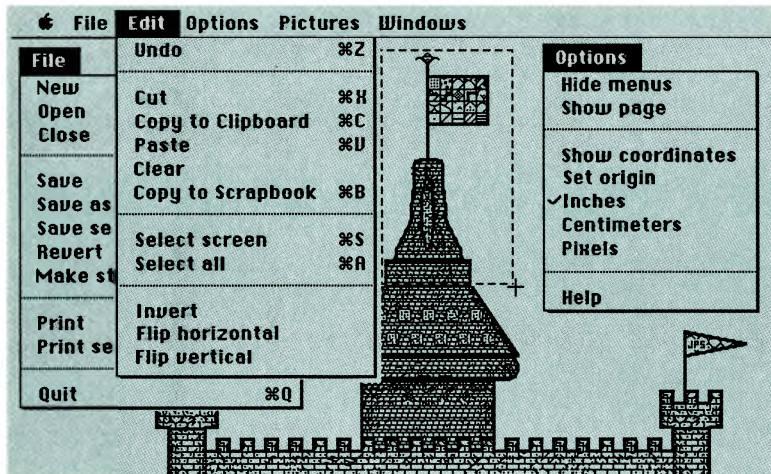
Here are some of the features of

### • Paint Cutter™

- The MacPaint file is displayed using the full screen. When the selection rectangle is dragged to the edge of the screen, the picture scrolls, allowing larger-than-screen selections. You can Cut or Copy any size selection, up to the entire picture.
- Paste these larger-than-screen selections into other programs that use the clipboard, like MacWrite and MacDraw.
- Create custom Startup Screens by selecting this option from the File menu.
- Move, invert or flip the selection, no matter how big it is.
- On a 512K Mac, open multiple MacPaint document windows and cut and paste between them instantaneously.



**Use PAINT CUTTER™ with SWITCHER™ for lightning fast results!**



Also included on the Accessory Pak 1 disk are:

- **MacPaint Rulers Desk Accessory**  
Install our rulers on the outside of the MacPaint window to measure in inches, centimeters or pixels. The rulers have moving trackers like MacDraw.
- **Screen Saver Program**  
Save your screen from image burn-in. When there is inactivity, the screen is blanked until the mouse is clicked.
- **QuickEject Desk Accessory**  
Quickly eject all floppy disks that are on-line and restart the system.
- **Coordinates Desk Accessory**
- **Silicon Beach Font**

To get your copy of **Accessory Pak 1** see your local dealer or send \$39.95 (Calif residents add \$2.40 tax) plus \$2.00 shipping to:

Silicon Beach Software  
P.O. Box 261430  
San Diego, CA 92126

-or-

Call us at (619) 695-6956  
Visa or Mastercard accepted



**System requirements:** 128K, 512K or XL.  
Screen Saver is not relevant to the XL.

Copyright © 1984 Silicon Beach Software, Inc.  
Accessory Pak 1 and Paint Cutter are trademarks of Silicon Beach Software, Inc.

Macintosh, MacPaint, MacWrite, MacDraw and Switcher are trademarks of Apple Computer, Inc.

# Manager

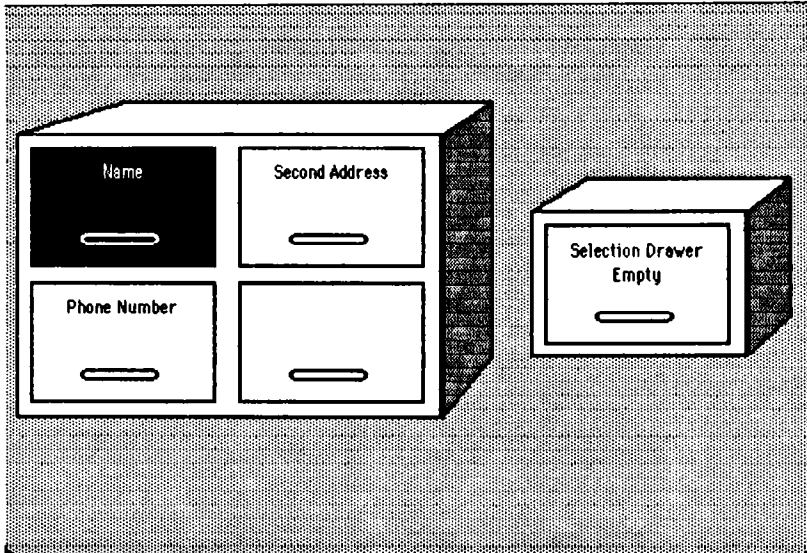
## Making the Most of Data

A database management program must ensure user confidence to succeed in today's business software market. Manager accomplishes this critical task by graphically incorporating the tools most everyone is familiar with—filing cabinets. Not only are four-drawer filing cabinets displayed on screen, each drawer has individual folders that contain the data. The data can be ordered according to your specifications.

The illustration shows the four-drawer file cabinet, with the highlighted drawer indicating that all of the data folders found inside are ordered alphabetically by Name. The upper right drawer is labeled Second Address and Name. This indicates that the data within its folders is identical to the data found in drawer #1, and they are sorted first by Second Address, and second by Names.

The program takes full advantage of Macintosh's user interface, is easy to use and simple to access. It has an upper limit of 65,000 folders or as much data as your disk will hold. I recommend using a hard disk drive for more storage and for accessing a LaserWriter. Without a hard drive, even after you remove the System and Clipboard and the Imagewriter driver from the Manager's System File, the program disk is still about 30K shy of the space necessary to install the LaserWriter and its minimum font set. I experienced numerous error messages when running a Macintosh XL, and eventually crashed my system.

Both data entry and manipulation are the simplest I've seen. Mistakes are easy to correct during and after entry into folders. Different forms do require separate file cabinets. Each folder also contains three items, a Data window, a Text window and a Picture window. The Data window itself shows the fields that hold the information, while the Text window reveals up to 1,000 characters of free-form information. The Picture window contains any graphic



you've created with MacPaint that could relate to the information in the associated Data window fields.

An import/export capability could have been explained more fully in the documentation, especially with regard to users of other database systems importing data into Manager. However, the program does import straight ASCII files AFTER a file cabinet has been established for data reception. It accepts data from Main Street Filer, one of the first databases for the Macintosh. The program exports directly to Microsoft Word, MacWrite, ASCII or DIF. The Clipboard method of cutting and pasting is another method of importing/exporting data.

You can manage reports quickly, either by Selecting Some of the folders via the Report menu, or by sending individually selected folders from their filing cabinet drawer to the single drawer cabinet entitled Selection Drawer. Reports range in format from Rolodex to Columnar, Envelopes, Form Letter, Labels, and List. Columnar reports can be modified and saved by the user through the Columnar Report Design, with summary data (total, average, count, maximum and minimum) specifications optional.

One convenient feature is a dialog box which displays suitable ranges for data you enter. Nothing seems left to chance, so the odds of inputting data in an incorrect format are zero. Simply click on the desired criteria. If you require a format or data change after establishing a set form in

a cabinet, you can modify them without destroying the original data.

Manager offers calculated fields. You enter the format data for the selected field by either typing in the formula itself or by clicking on the operators and numbers shown in a dialog box. There is an Auto Recalculate function which automatically recalculates fields when the specific folder is opened.

A 166-page user's manual explains all operations succinctly and includes a hands-on tutorial as well as a complete list of error messages and their meaning.

Non-copy protection assures easy transfer to a hard disk, although Mac XL users will find the program inoperable on their machines. LaserWriter report printing is not possible for micro disk drive systems due to limited space on the program disk. Nevertheless, I recommend Manager for anyone who wants an easy-to-use, yet sophisticated, database management system for office or personal use.

ValueSoft  
P.O. Box 1218  
Danville, CA 94526  
415-838-7507

● —Hartley G. Lesser



# The LisaTalk Report

## The Only Report Exclusively Published For Lisa/Mac XL Users

- Timely Information • Extensive Reviews •
- Product Testing • User Group Support •
- Developer Recognition •

## Focusing On

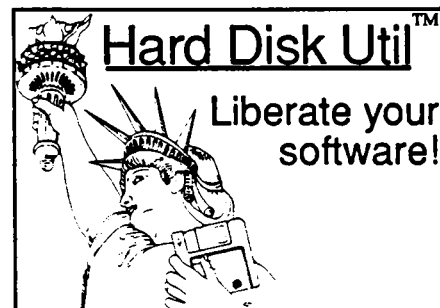
- Business Use • Programming • MacWorks •
- Lisa 7/7 • User Input • And More •

## Subscription Information

Regularly \$42.00 Per Year For 4 Quarterly Issues--Special MACazine Offer Until Christmas-- \$32.00 For A One-Year Subscription To The LisaTalk Report.

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The NetWorkers - Subscriptions  
345 Lorton Avenue, Suite 200  
Burlingame, CA 94010

Or Call: (415) 550-1710  
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and Lisa 7/7 are registered trademarks of  
Apple Computer, Inc.



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Liberate your software!

- Install most copy-protected programs on your hard drive, RAMdisk, or other floppies.
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Works on: Jazz™, OverVue™ 2.0, PFST™, Home Accountant™, D&S™ 1.3, MacDraft™ 1.1, ALL Microsoft™ Software, PageMaker™, ExperLisp™ 1.04 and over 150 others.

Constantly Updated!  
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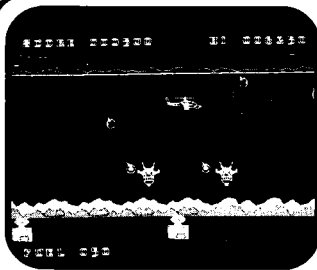
Requires: Macintosh™ 128/512/XL!  
w/One or two disk drives.

Compatible with any hard disk including HyperDrive™ and Apple's HD20™!

Send \$89.95 + \$3 shipping + (Tax in CA) to:

FWB Software, 2040 Polk St. Suite 215  
San Francisco, CA 94109 (415) 474-8055

AT LAST professional game designers taking the Macintosh seriously. Announcing two exciting new games designed especially for the Macintosh. Monkey Business and Delta Patrol are available now, and work on both the 128k and 512k MAC's. Drop by a dealer near you to see the first two releases by the programmers that have been at the top of both **SOFTSELL'S HOT LIST** and **BILLBOARD'S TOP COMPUTER SOFTWARE** list. Monkey Business and Delta Patrol professional quality software from the **OTHER VALLEY**.



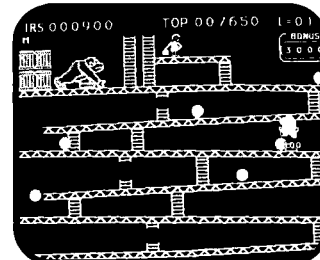
**DELTA PATROL**

As you speed your way over the rapidly changing terrain, you begin to realize that you are the last surviving member of Delta Patrol . . . Your knees shake, your stomach flutters. To relax, you think about what you are going up against. The scouts come first. But once you destroy a few of them the enemy commanders are on to you. What **YOU** do will determine the outcome of the next battle. **YOU** are the last surviving member of **DELTA PATROL!**

ARCADE ACTION - SMOOTH SCROLLING BACKGROUND - NEW MOUSE ROUTINES

As the top I.R.S. agent in your area, you have been "volunteered" to collect from Mr. Big. In your ten years as an I.R.S. agent you've seen every tax dodge imaginable. As you begin your pursuit of Mr. Big throughout his huge mansion, you quickly discover why the last three agents who came here did not return. To collect from Mr. Big, you must first overcome an obstacle or two. Such as: - An 8 foot tall 450 pound "bodyguard" - Rolling and flying trash cans - Ferocious attack dogs

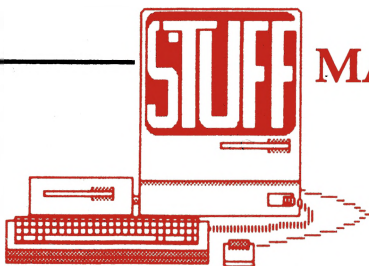
ARCADE ACTION - MULTIPLE SCENARIOS - INCREASING LEVELS OF DIFFICULTY



**MONKEY BUSINESS**

**Monkey Business and Delta Patrol are available now at your local dealer for just 34.95. Or contact us direct, Visa and Mastercard orders can be placed by phone. California residents please add 6% sales tax.**

**THE OTHER VALLEY SOFTWARE**  
976 W. FOOTHILL BLVD. STE. 490  
CLAREMONT, CA 91711  
(714) 980-0440  
(714) 980-7810



## MAC Stuff

**T**hese new products are listed as a service to our readers and do not imply any endorsement or guarantee.

### Downhill Racer

Microdot Software  
33 Norwood Ave.  
Kensington, CA 94707  
415-420-7888  
\$39.96 + \$2 shipping; check/VISA/Master-charge

A 3-D ski racing simulation for would-be Olympic skiers, this game is Pole Position, Flight Simulator, and Downhill at Sarajevo all rolled into one. Runs on all Macintoshes, but not on XL or Lisa.

### FileFinder

Nashoba Systems, Inc.  
175 Sudbury Rd.  
Concord, MA 01742  
617-371-2028  
\$24.95

A desk accessory which allows you to manage files while working within an application; has Copy, Delete, Rename and Get Info commands.

### BitFixer Aspect Ratio Switch

All Star Computer Services  
760 Dolores St.  
San Francisco, CA 94110  
415-282-0540  
\$95.00

This hardware allows the XL and Lisa computers to run Macintosh graphics software without distortion, and while continuing to use the 7/7 and Workshop software.

### B-Tree HELPER

(M)agreeable software, inc.  
5925 Magnolia Lane  
Plymouth, MA 55442  
612-559-1108 or  
CompuServe 72167,1700  
\$75.00

A set of Pascal subroutines to insert, find and delete records from a B-Tree file. It is written in Lisa Pascal source code.

### Hard Disk 20

Apple Computer Co.  
20525 Mariani Ave.  
Cupertino, CA 95014  
408-973-2042  
\$1495.00

Apple has created a 20MB hard disk drive which comes with a hierarchical filing system. It fits under your Macintosh and has an expansion port which allows a second drive, back-up tape device or external floppy drive to be connected to your system.

### Image Blue

Image Communications, Inc.  
640 W. Putnam Ave.  
P. O. Box 4809  
Greenwich, CT 06836-0086  
203-661-0607  
\$1,195.00 \$80/ software

This is an optical scanning system for capturing images, printing them, storing them to disk, and telecommunicating them to other computers. IBM PC/XT/AT and Macintoshes can receive and print scanned documents and images.

### PD Mac

Dept. M  
P. O. Box 5626  
Sherman Oaks, CA 91423  
\$20/subscription

PD Mac is a club which offers over 700 Macintosh public domain programs to members for \$9/disk plus handling. Membership includes a quarterly newsletter with tips and shortcuts plus a list of the latest programs added to the library.

### MacFrame2D

Design Source Software  
P.O. Box 91219  
Houston, TX 77291-1219  
713-820-7026  
\$150.00

This product is for structural engineers and designers who need to analyze two-dimensional structural frames.

### MacPerspective

B. Knick Drafting  
313 Marlin Pl.  
Melbourne Beach, FL 32951  
305-727-8071  
\$189.00

This program helps architects, draftsmen and commercial artists construct wire-frame perspective drawings of structures or other objects composed of straight lines. It incorporates zoom-in/zoom-out, relative drawing commands, direct entry of feet and inches, one-click deletion. Can be used on all Macintoshes.

### Personal Financial Planning with the Home Accountant

Arrays, Inc./Continental Software  
11223 So. Hindry Ave.

Los Angeles, CA 90045  
213-310-3977  
\$16.95

This book is a companion to the Home Accountant, a software package for organizing your financial affairs.

### Apple Macintosh Encyclopedia

Chapman and Hall, publ.  
733 Third Ave.  
New York, NY 10017  
\$19.95

This book written by Gary Phillips and Donald Scellato attempts to define hundreds of computer concepts in an alphabetical format.

### MacInTax

Softview, I Ltd.  
315 Arneill Rd. #215  
Camarillo, CA 93010  
805-388-2626  
1-800-MACNTAX  
1-800-MACVIEW (California)  
\$37.00—\$75.00

To help you through the IRS blues, MacInTax will help you calculate your income tax, print forms, worksheets and itemizations, and save all your data. The Federal package contains the software to meet the average taxpayer's needs. The Business supplement has special business forms and schedules. The State supplement is available for California and New York residents. Once registered, you can obtain yearly updates.

### ImageWriter II

Apple Computer Co.  
\$625.00 including cable + \$225 for sheet-feeder

This is the second generation version of the ImageWriter, done in white. It produces higher quality printouts and graphics at greater speed (250 cps). There is an expansion slot for introducing interface boards (e.g., AppleTalk Option). It can be used by all Apple computers and uses the standard ImageWriter I single color ribbons as well as four-color ribbons. The SheetFeeder comes with a driver utility.

### Apple Personal Modem

Apple Computer Co.  
\$399.00 + \$29.95 for cable

This is a small, 300/1200 BAUD modem which plugs directly into your electrical outlet. Has auto-answer, auto-dial and auto-redial capabilities and has an internal speaker and indicator light so you can monitor the status of the phone line and



carrier. It can be used on any computer with an RS-232C serial port.

### MacColby

Colby Computer  
849 Independence Ave.  
Mountain View, CA 94043  
\$699.00 for case + extra for tools

A case to convert your 128K or 512K Macintosh into a portable computer, the MacColby is constructed of rugged aluminum and plastic. When you pack it up, it weighs only 26 pounds and measures 8½" × 16½" × 17½".

### DS 800

Data Space Corp.  
205 Riviera Dr. #9  
Markham, Ontario L3R 2L6  
416-474-0113  
U.S. \$549.00

DS 800 is a doublesided 800K external disk drive for the Macintosh. It plugs into the drive port and does not require software modification. It reads and writes disks initialized on the internal drive and automatically formats both sides of the disk.

### FastMac

Mass Tech  
773 Boston Rd.  
Groton, MA 01450  
\$699.00 and up

This is a clip-on memory and CPU performance upgrade for the Macintosh. It is available in 1, 1.5 and 2 megabytes and does not alter your service contract because it can be easily removed for servicing.

### FactFinder 1.1

Forethought, Inc.  
1973 Landings Dr.  
Mountain View, CA 94043  
415-961-4720  
\$150.00

FactFinder is a free-form filing system for organizing and retrieving important day-to-day information, such as notes, ideas and simple documents. Version 1.1 is not copy-protected, is faster and works with the Switcher and the LaserWriter.

### McScheme

Semantic Microsystems  
1001 Bridgeway Suite 543  
Sausalito, CA 94965  
\$125.00

This is a robust implementation of the programming language Scheme, which is an influential modern dialect of Lisp. It has a fast interpreter with full run-time error detection and debugging, and features Smalltalk-like interface features like multiple scrolling windows. It supports Common Lisp features such as lexically scoped variables, first class procedures, macros and generic arithmetic. Not copy-protected.

### ExperLogo

ExperTelligence  
559 San Ysidro Rd.  
Santa Barbara, CA 93108  
805-969-7874

Version 1.1 includes enhanced error checking, greater window control, user definable menus and improved performance on Thin and Fat Macs. The update is free to registered owners.

### Express

Mirage Concepts  
4055 W. Shaw #108  
Fresno, CA 93711  
209-227-8369  
\$29.95

This package features word processing, mailing list functions, mail merge, memory typewriter, and file commands

### Rags to Riches

Chang Labs  
5300 Stevens Creek Blvd.  
San Jose, CA 95129-1088  
800-972-8800 (California 800-831-8080)

Chang Labs has translated its popular accounting package for the Mac, exploiting all the Mac capabilities and incorporating them into a powerful and intuitive RAM-based program. You can integrate the various modules via the Switcher and run it through AppleTalk. You can input data and observe results immediately on screen and print it out on the ImageWriter or LaserWriter. It functions best on a two drive system, and will work on hard disk drives.

### Macintizer

GTCO Corp.  
10 First St.  
Rockville, MD 20850  
301-279-9550

The Macintizer is an integrated electromagnetic digitizer which plugs directly into the mouse port. It has a stylus which allows you to draw on a tablet in an absolute coordinate mode, enabling you to do fine, detailed artwork.

### Granny Smith Connection

ZAP Logic Corporation  
290 Larkin St.  
Buffalo, NY 14210  
416-225-8815  
Retail: \$114.90

The new Granny Smith Connection for the Macintosh is a hardware parallel expansion interface that enables you to print full Mac graphics on a variety of parallel printers. It includes the hardware, cabling, and software drivers needed to run IBM, Epson, Diablo, Star and most other brands. The same Granny Smith Connection will enable you to use Dot Matrix, Daisy Wheel, Ink Jet, Thermal and electronic typewriters. It uses the latest low power consuming technology and therefore requires no external power supply.

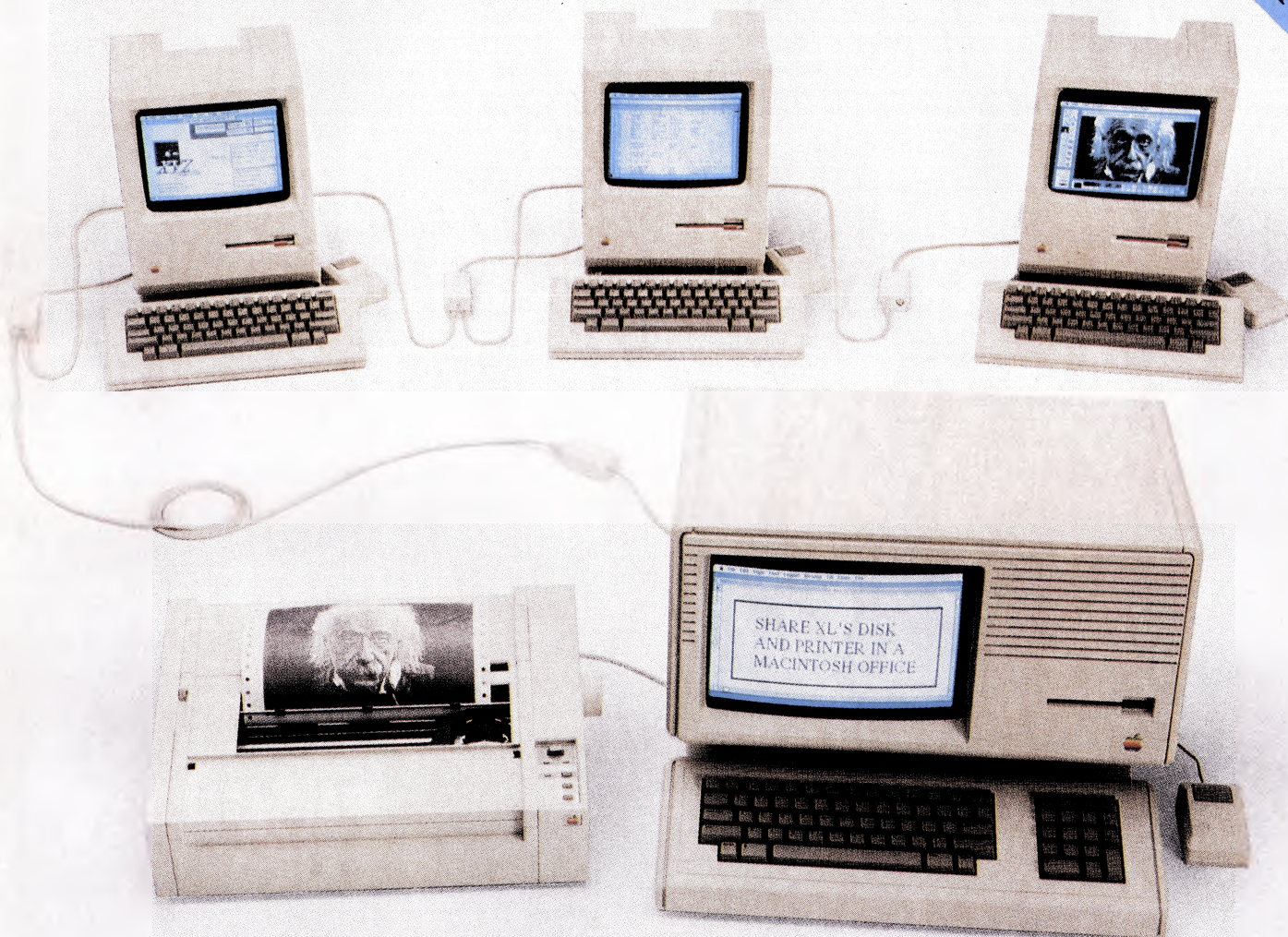
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# The Macintosh Office Expands.

Introducing  
MacServe!



You've heard of XL/Serve,<sup>™</sup> the first commercial AppleTalk software. It made the Macintosh Office a reality.

Thousands depend on it, every day, to reliably share information and resources. They access common applications, data, and printers on a Mac XL, the original Macintosh Office workhorse.

## **Introducing MacServe.<sup>™</sup>** **The second standard for AppleTalk networks.**

Now, your 512K Macs can share their disks and printers. You can build your Macintosh Office with freedom of choice, using any of the leading hard disk drives,\* perhaps with equipment

you already have. No need to buy an unproven black box, or to commit to a single hardware vendor.

Create up to 16 independent work areas on your hard disk; you set their sizes. For each, choose to share it over the network, and elect read-only or read-write access. Volume-level passwords control security of sensitive data.

There's also a shared printer spooler, so you and your colleagues can get on with things while your ImageWriter (or other serial printer) is churning out your documents.

**Some call our software sorcery**

Your MacServe host remains, primarily, a Macintosh workstation. Through true multitasking, we let you run your favorite applications (even Switcher) while others share your resources.

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When you're ready to build a network, ask for MacServe and XL/Serve at your local dealer, or call us at:

## **Infosphere, Inc.**

4730 SW Macadam Avenue • Portland, OR 97201 • 503-226-3620

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# Mac Mail



## Software That Would Impress an Extra-Terrestrial.

Telecommunications Software for the MACINTOSH™ featuring:  
Auto Dial, Auto Redial, Auto Answer, Unattended Operation, Auto Log-on and Log-off, On-line Message Editor, Terminal Emulation, MacBinary, X-Modem, Mailing Labels, and Much More!

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